





TQEHresearch 2009 Research Report



Contents

04	DIRECTOR	OF	RESEARCH	REPORT

- 06 2009 RESEARCH PUBLICATIONS IN THE SPOTLIGHT
- 09 ANAESTHESIA, Department of
- 10 CARDIOLOGY UNIT
- 18 CLINICAL PHARMACOLOGY UNIT
- **21** DERMATOLOGY UNIT
- 22 ENDOCRINOLOGY UNIT
- 24 GASTROENTEROLOGY AND HEPATOLOGY UNIT
- **26** GYNAECOLOGY, Department of
- 28 HAEMATOLOGY AND MEDICAL ONCOLOGY, The combined Departments of
- **34** INTENSIVE CARE UNIT
- **39** MEDICINE, University of Adelaide Discipline of
- 44 NEUROLOGY UNIT
- 51 NUCLEAR MEDICINE UNIT
- **54** NURSING RESEARCH
- 55 OTOLARYNGOLOGY, HEAD AND NECK SURGERY, Department of
- 59 PSYCHIATRY, University of Adelaide Discipline of
- **61** RENAL UNIT
- **68** RESPIRATORY MEDICINE UNIT
- 70 RHEUMATOLOGY UNIT
- 72 SURGERY, University of Adelaide Discipline of
- 77 THERAPEUTICS RESEARCH CENTRE, University of South Australia
- **80** PUBLICATIONS
- 93 INVITED PRESENTATIONS
- 105 RESEARCH SUPPORT STRUCTURES
- **111** AWARDS
- 115 ACKNOWLEDGEMENTS
- 116 THE QUEEN ELIZABETH HOSPITAL RESEARCH FOUNDATION





Professor Guy Maddern

Director of Research The Basil Hetzel Institute for Medical Research The Queen Elizabeth Hospital

Director of Research Report

2009 began with great enthusiasm as groups moved into The Basil Hetzel Institute building at The Queen Elizabeth Hospital. Like all new buildings, there have been the inevitable problems in resolving small but irritating technical glitches but, at the time of writing this report, all but one major problem has been satisfactorily resolved and the groups are enjoying their new environment. There can be little doubt the architecture has greatly facilitated co-operation and a sense of camaraderie and team work across the groups. This has led to much enthusiasm and interest in joining a number of the teams based at The Queen Elizabeth Hospital and over the next 1-2 years it is anticipated a number of new research groups may well relocate to the facility.

The other significant change over the last twelve months has been to develop five significant themes within the building in order to optimise resources and focus the efforts of the research community at the hospital. Increasingly, the focus is on translational research. This is particularly appropriate as the great strength of the Basil Hetzel Institute is its very close link to patient care. There is an abundance of questions that need to be answered about the patients being treated at the hospital and using the research infrastructure to tackle some of these important questions seems logical and appropriate.

Alongside this move towards translational research has been the development of the South Australian Health and Medical Research Institute on North Terrace. The Commonwealth Government has allocated \$200 million to this new capital development and it is envisaged that it will have a central role for research in South Australia with a close relationship to its nodes, such as the Basil Hetzel Institute, around the major hospitals not on the North Terrace precinct. This relationship needs careful oversight and the next few years will be critical to ensure that appropriate structure, relationship and co-operation is developed. The great challenge will be to use successfully all the research infrastructure in South Australia but have a co-ordinated approach to its endeavours and the funding available to support medical research. At this stage the general direction being adopted is positive and providing it is carefully managed, there can be little doubt that medical research within South Australia will benefit from this enormous capital injection. The problem as always is to ensure adequate recurrent funds are available to keep staffed such a large and complex vision.

As we go forward into the next decade the site at The Queen Elizabeth Hospital has adequate space for a further doubling of the Research Institute size and efforts to obtain funding and groups for this are now being actively pursued.



"The great challenge in Neurology is how to repair the brain following damage from stroke, neurodegenerative diseases (such as Parkinson's and Alzheimer's disease) and trauma."

2009 Research Publications in the spotlight

Perugini M, Kok CH, Brown AL, Wilkinson CR, Salerno DG, Young SM, Diakiw SM, Lewis ID, Gonda TJ, D'Andrea RJ. Repression of Gadd45alpha by activated FLT3 and GM-CSF receptor mutants contributes to growth, survival and blocked differentiation. *Leukemia* 2009; 23:729-738.

Impact Factor: 8.6

The publication from Richard D'Andrea's group in Leukemia in 2009 describes the role of a growth regulatory gene (encoding the Growth Arrest and DNA Damage 45 alpha protein) that is down-regulated in Acute Myeloid Leukaemia (AML), particularly in AML's that harbour the common FLT3 mutation. In dissecting the mechanism by which leukaemic cells alter expression of this gene and obtain a growth advantage this work has described an important change that can be potentially targeted in the treatment of AML. Importantly this study included cell line studies and studies with AML patient samples validating the role of this pathway. These studies set the stage for mouse experiments to determine the ability of this pathway to cooperate with other events that contribute to AML.

ANZIC Influenza Investigators, Webb SA, Pettilä V, Seppelt I, Bellomo R, Bailey M, Cooper DJ, Cretikos M, Davies AR, Finfer S, Harrigan PW, Hart GK, Howe B, Iredell JR, McArthur C, Mitchell I, Morrison S, Nichol AD, Paterson DL, Peake S, Richards B, Stephens D, Turner A, Yung M. Critical care services and 2009 H1N1 influenza in Australia and New Zealand. *N Engl J Med*. 2009 Nov 12; 361(20):1925-34.

This publication has been published by the New England Journal of Medicine, the top ranked journal. The investigators were able to obtain 100% case ascertainment for all Australia and New Zealand and calculated per million inhabitants, the numbers of ICU admissions, bed-days, and days of mechanical ventilation due to infection with the 2009 H1N1 virus. Data was also collected on demographic and clinical characteristics of the patients and on treatments and outcomes.

The 2009 H1N1 virus is very topical and had a substantial effect on ICUs during the winter in Australia and New Zealand. This publication will assist planning for the treatment of patients during the winter in the Northern Hemisphere. A/Professor Sandra Peake is a member of the study Management Committee.

Arthur A, Shi S, Zannettino AC, Fujii N, Gronthos S, Koblar SA. Implanted adult human dental pulm stem cells induce endogenous axon guidance. *Stem Cells* 2009: 27(9):2229-37.

Stem Cells impact factor 7.9

'Regenerative medicine is a new and exciting field which involves stem cell biology and surgical transplantation to treat a myriad of diseases. The great challenge in Neurology is how to repair the brain following damage from stroke, neurodegenerative diseases (such as Parkinson's and Alzheimer's disease) and trauma. The data from this study was highly significant as it demonstrated for the first time how adult human stem cells from the tooth produce factors which can actively rewire the nervous system. This finding has led to pre-clinical animal studies looking at how stem cell therapy may repair the brain following a stroke. The work was undertaken by the Stroke Research Programme which is a collaboration between the laboratories at the Basil Hetzel Institute for Medical Research, TQEH, the School for Molecular and Biomedical Sciences, University of Adelaide and a long-term collaborator A/Prof Stan Gronthos from the Division of Haematology, Hanson Institute, Adelaide.'

Foreman A, Singhal D, Psaltis AJ, Wormald PJ. Targeted imaging modality selection for bacterial biofilms in chronic rhinosinusitis. *Laryngoscope* 2009; Nov 30. [Epub ahead of print]

Impact Factor 1.8

Chronic Rhinosinusitis (CRS) is an extremely common condition, encountered regularly by all ENT surgeons. However it is a challenging condition to manage because current therapeutic regimes lack specificity. This is primarily because the underlying pathogenesis of this condition is poorly understood and therefore treatment options cannot be specifically targeted against an underlying cause. Recently biofilms have been proposed as a potential instigator of this disease and the role they play in CRS has developed into one of the hottest topics in ENT research. Clinically this is a highly relevant area of research because unlocking the pathogenesis of CRS will eventually enable the development of targeted anti-biofilm treatments that can improve the outcomes of our CRS patients. In the mean time our primary research aim is to better understand the nature and specific characteristics of bacteria within the biofilms as well as outline the host response to these bacterial colonies. This paper uses sinonasal mucosal specimens from CRS patients to directly compare the two most commonly used microscopic techniques for biofilm detection. The results of this research provide evidence-based guidelines to assist researchers in identifying situations in which each technique is ideally suited and ensures they select the appropriate technique that is best able to answer their research question. Thus this paper will have a significant impact on future research in this area. Furthermore, biofilms are being recognised as being involved in the pathogenesis of other diseases of the ears (otitis media with effusion), nose and throat (chronic tonsillitis) so this research is relevant for our wider specialty, justifying our decision to seek publication in the peak journal of our specialty- The Laryngoscope. In summary, we hope this research will assist future work in this area and expedite our path towards our goal of developing novel anti-biofilm treatment strategies that can improve our patient's outcomes.

Adams RJ, Appleton S, Hill CL, Ruffin RE. Inadequate health literacy is associated with increased asthma morbidity in a population sample. *Journal of Allergy and Clinical Immunology*. 2009; 124:601-3.

Journal of Allergy and Clinical Immunology Impact Factor 9.8

Health literacy (HL) enables patients to understand and to act in their own interests and is associated with health status, preventive health behaviours, and health care costs. HL in a representative sample of people with asthma has not been reported however. In subjects with asthma identified in the 2008 South Australian Health Omnibus Study, increased symptoms, functional impairment, and significant health care use were more common in people with less HL in analyses adjusted for age, sex, and education. This suggests that HL is not merely acting as a proxy for education. Asthma itself, however, was not increased in people with low health literacy, consistent with the notion that HL affects asthma management and interactions with health services rather than factors associated with the development of asthma. These findings indicate that the consideration of HL across all asthma clinical practice and self-treatment education should be a priority in attempts to address the ongoing community burden of asthma morbidity.

Barkun JS, Aronson JK, Feldman LS, Maddern GJ, Strasberg SM; Balliol Collaboration, Altman DG, Barkun JS, Blazeby JM, Boutron IC, Campbell WB, Clavien PA, Cook JA, Ergina PL, Flum DR, Glasziou P, Marshall JC, McCulloch P, Nicholl J, Reeves BC, Seiler CM, Meakins JL, Ashby D, Black N, Bunker J, Burton M, Campbell M, Chalkidou K, Chalmers I, de Leval M, Deeks J, Grant A, Gray M, Greenhalgh R, Jenicek M, Kehoe S, Lilford R, Littlejohns P, Loke Y, Madhock R, McPherson K, Rothwell P, Summerskill B, Taggart D, Tekkis P, Thompson M, Treasure T, Trohler U, Vandenbroucke J. Evaluation and stages of surgical innovations. Lancet. 2009 Sep 26;374(9695):1089-1096.

Lancet Impact Factor 28.4

This was a paper that highlighted the challenge of conducting high quality research within a surgical context. It was part of three papers put together over a number of years to explain the process of surgical research, why it is different and how its differences can be corrected for. The paper has defined a very clear agenda to improve of surgical research in order to give it the same quality and scientific rigor associated with much of the work conducted within the pharmaceutical industry. The paper is an important benchmark by which future surgical research will be judged and offers a clear and unambiguous path for aspiring surgeons to follow in their research endeavours.

"The results of this research provide evidence-based guidelines to assist researchers in identifying situations in which each technique is ideally suited and ensures they select the appropriate technique that is best able to answer their research question."



Department of Anaesthesia



Dr Roelof van Wijk

Overview

The Department of Anaesthesia, The Queen Elizabeth Hospital, provides Anaesthetic services to Surgery, Cardiology, Imaging, Psychiatry, and the Pregnancy Advisory Centre. Our Acute Pain Service provides advice and postoperative pain management services throughout the Hospital.

The Department is part of the SA/NT Anaesthetic Rotation Scheme for the training of Registrars in Anaesthesia. It is engaged in teaching airway skills for Resuscitation, Ambulance staff and the Emergency Department, and also involved in the assessment of rural General Practitioners for Anaesthetic privileges. We provide lectures and bed-side teaching sessions for fourth to sixth year medical students. The Department partici-

pates in the redesign and implementation of undergraduate teaching in Anaesthesia and Pain Medicine for medical students, together with other Departments and disciplines within the region.

Research is focused on:

- regional anaesthesia anatomy, imaging and techniques, in collaboration with TQEH Radiology Department;
- (ii) predictors of acute postoperative pain, with special focus on psychosocial predictors (CaReSS-project), in collaboration with the Department of Psychology at the University of Adelaide and TQEH Psychiatry Department; and
- (iii) airway management techniques.

"The Department of Anaesthesia is engaged in teaching airway skills for Resuscitation, Ambulance staff and the Emergency Department, and also involved in the assessment of rural General Practitioners for Anaesthetic privileges."

Staff Head of Department

R van Wijk MD PhD FANZCA FFPMANZCA

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M Kha FANZCA

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A Laver FANZCA

R Lea FANZCA

P Chien Lim FANZCA

R Limb FRCA FANZCA

A Michael FANZCA

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A Moffat FFARCS

D Nemeth FANZCA

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A Rajbhoj FANZCA

V Rao Kadam FANZCA

R Sethi FANZCA

R Steiner FANZCA

H Stevens FANZCA

G Tham FANZCA

V Thiruvenkatarajan FANZCA

T Visvanathan FANZCA

R Watts FRACGP

P Woodhouse FANZCA

Consultant Physician

C Gibb FRACP

Visiting Medical Officers

M Alam FANZCA

E Chye FANZCA

J Currie FFARCS

P Naderi FANZCA

G Newcombe FANZCA

K Peng Ng FANZCA

A Sen FANZCA

Nurse Practitioner

J Tonkin CNC

Grant

TQEH Research Foundation. (Small grant 2009) Targeted Cognitive Behavioural Therapy on catastrophic thinking and peri operative pain. (\$7,305 2009) Jarvis K, Steele A, Tonkin J, van Wijk R.



Department of Cardiology

Research focus

The Cardiology Unit has recently undertaken formal association with other TQEH researchers in Clinical Pharmacology and Vascular Surgery, and researchers in the Physiology Department, University of Adelaide, to form the TQEH Vascular Disease and Therapeutics Research Group. The overall research focus of the enlarged group is on development of new therapeutic modalities for cardiovascular diseases, utilising a translational, "bench to bedside" approach.

Professor John Horowitz



Overview Early Reperfusion Therapies for Acute Myocardial Infarction (A/Prof J Beltrame)

The emergency treatment of acute myocardial infarction has undergone a rapid evolution in the past 25 years with coronary artery angioplasty and stenting being considered the optimal therapy to re-establish coronary patency. Clinical studies being undertaken at TQEH are examining pharmacologic therapies which may further enhance these mechanical treatments.

The IVANA trial (Intravenous Verapamil and Nitrates in Acute Myocardial Infarction) is a multi-centre study supported by the National Heart Foundation and co-ordinated by TQEH. This novel study will establish if readily available vasodilator therapy (Verapamil and Nitroglycerin) promptly restores coronary artery patency in patients with ST elevation myocardial infarction. Patient recruitment was completed in December 2009 and data analysis is in progress for this potentially ground-breaking study.

The early use of N-acetylcysteine in acute myocardial infarction (NACIAM) study was initiated with the completion of the IVANA study. This study examines the cardio protective benefit of N-acetylcysteine in ST elevation myocardial infarction by ascertaining if it reduces infarct size.

Mechanisms and Therapeutics of Coronary Microvascular Disorders (A/Prof J Beltrame)

The coronary slow flow phenomenon is a coronary microvascular disorder that was initially characterised at TQEH. Our studies demonstrated that these patients frequently manifest as an acute coronary syndrome

yet seldom experience an acute myocardial infarct. However they are considerably disabled, as many patients experience recurrent chest pain that responds poorly to conventional vasodilatory anti-anginal agents. In isolated vessel studies, we have shown that microvessels respond differently to large vessels and thus we must re-examine the vascular pharmacology of these vessels if we are to develop new therapies for these microvascular disorders. Our basic vasomotor research program is exploring novel vasomotor therapies including the use of statins, endothelin blockers, rho-kinase inhibitors, and calcium T-channel blockers.

Reflecting the translational nature of our basic research studies into clinical outcomes, we have recently evaluated the clinical benefits of an endothelin blocker (bosentan) in preventing angina in patients with the coronary slow flow phenomenon. The last of the required patients have been recruited into this important study and the results should be available early in the new year.

In addition to the above basic and clinical studies, our research has been evaluating the morbidity associated with microvascular disorders, specifically the impact on symptom status and quality of life. These original studies will provide important insights into the health burden of these microvascular disorders.

Impact of Coronary Heart Disease on Quality of Life (A/Prof J Beltrame)

The above quality of life studies have been extended to patients with obstructive coronary artery disease and have already provided significant insights into populations with angina. In particular, our observational studies at TQEH have corroborated a major clinical trial of angina therapies.

The Clinical Utility of Coronary CT Angiography (A/Prof J Beltrame)

The non-invasive assessment of coronary artery stenoses by CT angiography has considerably advanced in recent years. How to optimally utilise this technology in routine clinical practice remains unclear. In close collaboration with TQEH Radiology Department, we are investigating the clinical utility of coronary CT as compared with conventional non-invasive imaging techniques in reducing the need for additional investigations such as invasive coronary angiography.

Depression in Patients with Coronary Heart Disease (A/Prof J Beltrame)

In collaboration with TQEH Department of Psychiatry, studies are being undertaken to examine the impact of depression on patients with coronary heart disease. Therapeutic strategies to manage these patients are also being assessed. Currently, in conjunction with TQEH Department of Psychiatry and University of South Australia researchers, we are examining the anti-depressant effects of fish oils in patients with coronary artery disease.

Pathogenesis of aortic stenosis (Prof J Horowitz, A/Prof J Kennedy, Dr O Akbar Ali, Dr Y Chirkov, Dr D Ngo, Dr A Sverdlov)

Aortic stenosis (AS) is the most common cause of valvular heart disease in the Australian population. It affects individuals particularly as they age. We are trying to develop therapies to retard the progression of aortic stenosis and thus decrease the need for valve replacement. Components of the research in this regard include creation of a tissue culture model of aortic valve disease, development of aortic stenosis in rabbits treated with vitamin D supplements, and preparation of a human data base for patients with early stages of aortic stenosis ("aortic sclerosis"). Studies in a cohort of 255 ageing normal subjects have identified dysfunction in the aortic valve endothelial layer and of circulating platelets as potential target areas in such patients. A follow up study is being undertaken to identify patients at risk for rapid progression of disease. We have also identified the congenital condition of bicuspid aortic valve as a potential model of valve disease resulting from lack of nitric oxide effect. We are also evaluating the possible effects of a number of agents in improving outcomes in aortic stenosis. This includes a clinical

study of the effects of perhexiline (the IMPASS investigation) and also an evaluation of the effects of ramipril in rabbits.

Metabolic anti-ischaemic agents (A/Prof J Kennedy, Prof J Horowitz)

Our recent research has shown that perhexiline, already known to be effective in relieving angina in patients who are unresponsive to other therapies, also improves left ventricular function in patients with heart failure. The relationship of this improvement to our recent demonstration that perhexiline markedly improves the efficiency of oxygen utilisation of the myocardium, as well as suppressing inflammatory changes in white blood cells, valvular cells and endothelial cells, is under investigation. The focus of current investigation is the finding that perhexiline improves cardiac function in patients with severe heart failure: We are examining potential links between the anti-inflammatory and metabolic modulating effects of the drug. We are also interested in evaluating the effects of perhexiline as an adjunct to reperfusion therapy in acute myocardial infarction. We have therefore developed a regimen for acute treatment of patients with evolving myocardial infarction with perhexiline.

The Role of p53 in Heart Failure (Dr A Holmes)

The transcription factor p53 has important roles in regulating gene expression of key cellular processes such as oxidative stress, mitochondrial respiration, glycolysis, and fibrosis. Studies being conducted at TQEH will examine if myocardial p53 function contributes to changes in these cellular processes in ageing and heart failure

Optimising the effects of Nitrates and Nitric Oxide in arteries and platelets (Prof J Horowitz, Dr Y Chirkov, A/Prof J Kennedy)

The basis for this research is related to the following observations. Firstly, nitric oxide, which is released from the endothelial lining of blood vessels and prevents spasm and thrombosis of these vessels, becomes less effective in patients who are prone to the development of coronary events. This phenomenon, of nitric oxide resistance, has been shown by our group to be a major prognostic marker. The second related observation is that drugs used in the treatment of heart disease such as nitroglycerin, (a nitric oxide

"The relationship of this improvement to our recent demonstration that perhexiline markedly improves the efficiency of oxygen utilisation of the myocardium, as well as suppressing inflammatory changes in white blood cells, valvular cells and endothelial cells, is under investigation."

"The success of such interventions has lead to the wide spread clinical utilisation of nurse lead outreach programs for patients with chronic heart disease."

donor) become less effective with the passage of time, a phenomenon known as nitrate tolerance.

We are interested in developing strategies to circumvent both of these problems. We have demonstrated that a number of forms of therapy calculated at reducing redox stress improve tissue responsiveness to nitric oxide. Such therapeutics include ACE inhibitors, perhexiline, possibly cholesterol lowering, and certainly improved diabetic control in diabetics.

We are also investigating the potential role of the nitroxyl anion as a means of optimising vasodilator function. Since we have previously shown that responsiveness of tissues to nitric oxide may be attenuated in high risk groups of patients, we wish to examine potential means for circumventing this problem. Both novel donors of nitroxyl anion and "direct" activators of soluble guanylate cyclise are under investigation.

Platelet and Endothelial Dysfunction in the Polycystic Ovary Syndrome (Prof J Horowitz)

The polycystic ovary syndrome is a common cause of menstrual disturbances and impaired fertility. Many people with polycystic ovary syndrome are obese and there is an increased risk of diabetes. It has been suggested for some time that polycystic ovary syndrome may be a risk factor for the development of heart disease in women, but it has been felt that this occurs via the associated obesity, insulin resistance and diabetes. We have shown that young women with polycystic ovary syndrome exhibit abnormalities of platelet and blood vessel function (but not of endothelial progenitor cell production) irrespective of body weight. These ongoing studies will seek to investigate the implications of therapy and the ageing process on cardiac risk profile in this group of individuals. In particular, we will evaluate associations between polycystic ovary syndrome, vascular and platelet function and endothelial progenitor cell counts in various subsets of patients.

Non-pharmacological interventions in Heart Failure (Prof S Stewart, Prof J Horowitz)

We have previously shown that outcomes in patients with chronic heart failure can be improved by screening them for short term deterioration during the early period of time after discharge from hospital. The success of such interventions has led to the wide spread clinical utilisation of nurse lead outreach programs for patients with chronic heart disease. The nature of these programs varies somewhat, and it is important to delineate the optimal program for patient outcomes. We have demonstrated that the protocol developed at TQEH is associated with reduced admissions as well as improved survival over a 10-year period. An ongoing research program will compare this protocol with related forms of clinic-based intervention in patients with chronic heart failure.

Pathogenesis of Tako-Tsubo Cardiomyopathy – "Broken Heart Syndrome" (Prof J Horowitz, A/Prof J Beltrame, Dr S Unger, A/Prof J Kennedy, Dr Y Chirkov)

Tako-tsubo cardiomyopathy is an uncommon but interesting condition that mimics acute myocardial infarction although there is no evidence of coronary artery disease. The condition often occurs in women and is typically precipitated by severe emotional stress. While the condition maybe life threatening in its acute presentation, the long term prognosis is generally good. Utilising basic laboratory studies and clinical cardiac magnetic resonance imaging techniques, important advances have been made at TQEH in understanding the mechanisms responsible for this disorder. A recently initiated, NHMRC-funded research project will set out to improve diagnostic methodology for such patients, evaluate the risk of peroxynitrite formation in the pathogenesis of the condition, and determine whether there is actually complete recovery from attacks.

Role of Thioredoxin/TXnip system in human disease (Prof J Horowitz, A/Prof J Kennedy, Dr D Ngo)

We have recently demonstrated that development of aortic stenosis in a rabbit model is associated with increased concentrations of the intracellular pro-oxidant thioredoxin-interacting protein (TXnip). We are now evaluating the potential role of TXnip in other models of aortic stenosis and in other cardiovascular disease states.

Major Enabling Technologies:

1. Assay of asymmetric dimethylarginine (ADMA). This assay, developed by Ms Tamila Heresztyn, provides a marker of the function of the vascular endothelium.

- We recently reviewed the importance of this assay for all cardiac studies examining both physiology and prognostic markers.
- Magnetic Resonance Imaging (MRI) of the Heart. In collaboration with TQEH Radiology Department we have developed a considerable cardiovascular MRI program with over 1,000 studies performed. Increasingly this technology is being utilised for our clinical research studies to identify infarct size and perfusion abnormalities.
- 3. Echocardiographic Backscatter. This technique, initially utilised for the quantitation of early aortic stenosis in a study from TQEH, is a vital tool in enabling us to follow the progression of aortic valve disease in both animal models and in the general population.
- 4. Basic Vasomotor Studies. In collaboration with TQEH Vascular Surgery and the University of Adelaide Physiology Department, we have an extensive basic research program to evaluate human vascular structure and function. This includes identification of calcium channels, isolated vessel reactivity and vessel responses in a beating heart.
- Clinical Vasomotor Studies. To complement these basic studies we have several clinical methodologies including endothelial function testing, evaluation of coronary vasospastic responses, coronary Doppler wire and pressure wire studies.
- 6. Endothelial Progenitor Cells Function. In collaboration with the Renal Unit of TQEH, we are developing methods for quantitating the release from the bone marrow of endothelial progenitor cells, which play a major role in the ongoing repair of the vasculature. Disorders of endothelial progenitor cell function postulated in association with most forms of cardiac disease and an additional therapeutic objective should be optimisation of EPC release.

Collaborators

- (1) Department of Physiology, University of Adelaide
- (2) Department of Medicine, St Vincent's Hospital, Melbourne
- (3) Department of Epidemiology & Preventative Medicine, Monash University, Melbourne
- (4) Cardiology Department, Birmingham University, UK
- (5) Department of Obstetrics and Gynaecology, University of Adelaide
- (6) Baker Research Institute, Melbourne
- (7) Department of Biochemistry, University of Hannover, Germany

Staff

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D Lypourlis MD FRACP

D Mahadevan BMBS FRACP

K Mishra MBBS MD MRCP FRACP

C Neil MBBS FRACP

D Ninio MBBS(Hons) FRACP

A Philpott MBBS FRACP

S Rajendran MBBS PhD FRACP

P Sage MBBS PhD FRACP

AL Sverdlov MBBS FRACP

S Unger MBBS PhD FRACP

AS Warner MBBS BMedSc(Hons) PhD FRACP

Senior Research Scientists

YY Chirkov BSc PhD

A Holmes BSc(Hons) PhD

JA Kennedy BSc(Hons) PhD

D Ngo BPharm BHlth Sc(Hons) PhD

DP Wilson BSc(Hons) MSc PhD

Laboratory Manager

I Stafford BSc

Research Assistants

D Das MSc

T Heresztyn BSc

Technical Officer

G Murphy BA

Trial Coordinators

C Anderson-Stanford RN

M Black RN

J Rose RN

T Selkow RN

N Smith RN

"Utilising basic laboratory studies and clinical cardiac magnetic resonance imaging techniques, important advances have been made at TQEH in understanding the mechanisms responsible for this disorder."

Postgraduate Students

PhD Candidates	
P Averbuj MD FRACP	"Pathophysiological interactions between diabetes and chronic
	kidney disease: implication for vascular events."
A Chan MBBS FRACP	"The polycystic ovary syndrome and coronary risk"
S Copley BSc(Hons)	"The Role of RHO Kinase Inhibitors and Statins in the Coronary
	Slow Flow Phenomenon"
N Cutri BSc(Hons)	"The Characteristics of Microspastic Angina"
R Dreyer BSc(Hons)	"Variation in Recovery: Role of Gender on Outcomes of Young
	Acute Myocardial infarction (AMI) – Patients. The VIRGO Study"
N Ghaffari BSc(Hons)	"The Modulation of Vasomotor Responses by Statin Therapy"
E Goble RN BSc(Hons) MSc	"Physiological determinants of outcome in heart failure"
N Hurst mbbs fracp frcpa	"The effect of the nitric oxide and prostacyclin pathways on platelet aggregation"
L Jesuthasan MBBS FRACP	"Coronary and myocardial perfusion studies of the
	coronary slow"
V Kopetz BSc(Hons)	"Biological determinants of the coronary slow flow phenomenon"
G Mahadevan MBBS FRACP	"The pathophysiology and potential therapeutics of diastolic heart failure"
C Neil MBBS FRACP	"Is the therapeutic induction of bradycardia beneficial in heart
	failure? Implications for cardiac contractility"
A Philpott MBBS FRACP	"Mechanisms and prevention of nitrate tolerance"
K Rajopadhyaya BSc(Hons)	"Molecular Physiology of Vascular Function"
C Smith BSc(Hons)	"Calcium T-Channel Distribution in the Human Vascular Tree
	and its Relation to Function"
A Sverdlov MBBS FRACP	"Pathogenesis of aortic sclerosis"
R Tavella BSc(Hons)	"Quality of life, depression and cardiac disease"
Honours Candidates	
D Calvanese BSc	"The evaluation of cardiovascular health in chronic methampetamine users" Class IIA Honours
Y Chan BSc	"ET-1 vasoconstriction involves IP3, voltage-gated and
i Chair bac	soc channels" Class I Honours
A Jaghoori BSc	"Comparison of selective and dual endothelin blockade on
	Simvastatin effect on endothelin vasoconstrictor response"
	Class I Honours
R Lindop BBiotech	"Characterisation of Tissue Nitric Oxide Responsiveness in Patients with Bicuspid Aortic Valve" Class I Honours
Cardiology Departmer	nt Vacation Scholarship 2009-2010
J Eng	"Endothelin Antagonists and Statin Therapy -
	Is there a difference between selective Endothelin-A receptor
	antagonism and Combined Endothelin-A and B receptor
	antagonism?"

Grants

BUPA Australia. The Clinical Utility of CT Coronary Angiography in the Assessment of Patients with Intermediate Probability of Coronary Artery Disease. (\$100,000 2009) 2008-2010, Beltrame JF, Sebben R.

Cardio Vascular Lipid Research Grant Pfizer Australia. Bicuspid aortic valve. (\$55,000 2009) Akbar Ali O.

Department of Health Strategic Health Research Program. Health, economic, psychological and social benefits of educating carers. (\$486,990 2009-2010) Phillips P, Jones T, Eckerman S, Worthley S, Beltrame JF, Chew D, Arstall MA, Cafarella P.

National Heart Foundation of Australia. Endothelial dysfunction, redox stress and the pathogenesis of aortic valve calcification. (\$129,000 2009) 2008-2009, Horowitz JD, Kennedy JA.

National Heart Foundation of Australia. The prevalence of heart failure in Aboriginal communities in Central Australia: The Heart for the Heart Study (Stage 1). (\$129,000 2009) 2008-2009, Brown A, Stewart S, Zeitz C, Krum H, Lee G, McGrady M, Carrington M.

National Heart Foundation of Australia. The Mevalonate and Rho kinase Pathways: Combination Therapy Targeted at the Treatment of Microvascular Dysfunction. (\$123,000 2009) 2009-2010, Wilson DP, Beltrame JF, Horowitz JD.

National Heart Foundation of Australia. (Grant in Aid G07A3109) The early use of N-AcetylCysteine in Acute Myocardial Infarction. (The NACIAM Study) (\$64,500 2009) 2008-2009, Beltrame JF, Arstall MA, Selvanayagam J, Horowitz JD.

National Heart Foundation (South Australia). (J-Trust Fund) Vascular studies using a Laser Doppler Surface Blood Flow Monitor. (\$15,000 2009) 2009-2010, Beltrame JF.

NHMRC. (Project grant #472642) Novel cGMP-Based Therapies Prevent Left Ventricular Remodelling. (\$197,250 2009) 2008-2010, Ritchie RH, Horowitz JD, Kemp-Harper BH.

NHMRC. (Health Services Research Program # 418967) Which Heart failure Intervention is most Cost-effective and consumer friendly in reducing Hospital care: The WHICH? Study. (\$175,740 2009) 2008-2012, Stewart S, Scuffham P, Marwick T, Horowitz JD, Krum H, Davidson P, Peter M, Reid C.

NHMRC. (Project Grant) Tako-Tsubo cardio-myopathy: pathogenesis and natural history. (\$79,000 2009) 2009 – 2011, Horowitz JD, Beltrame JF, Selvanayagam J, Frenneaux M, Tsikas D.

Rebecca L Cooper Medical Foundation. (Project Grant) Vitamin D deficiency and endothelial dysfunction in people with diabetes. (\$16,000 2009) 2009-2010, Ngo DT.

TQEH Research Foundation. (NHMRC Near Miss grant 2008). The Rho Kinase pathway: A therapeutic target for micro vascular dysfunction. (\$75,000 2009) Beltrame JF.

TQEH Research Foundation. (NHMRC Near Miss grant 2008) Determinants of progression to aortic stenosis. (\$35,000 2008-2009) Horowitz JD.

TQEH Research Foundation Strategic Initiatives Funding. (Program grant) TQEH Vascular Disease and Therapeutics Research Group: towards improved outcomes for vascular disease. (\$180,000 2009) 2009-2011, Horowitz JD, Beltrame JF, Morris RG, Fitridge RA, Zeitz CJ, Wilson DP, Sallustio BC, Chirkov YY, Kennedy JA, Cowled PA.

TQEH Research Foundation. (Small grant 2008) IVANA study continuation funding. (\$12,000 2009) Beltrame JF.

TQEH Research Foundation. (Small grant 2009) Clinical and Biological Determinants of the Coronary Slow Flow Phenomenon. (\$6,000 2009) Beltrame JF, Heresztyn T.

TQEH Research Foundation. (Small grant 2009) Hyperglycaemia attenuates p53 function in the endothelium. Implications for impaired vasodilator function in diabetes. (\$10,412 2009) Holmes A, Kennedy JA.

TQEH Research Foundation. Top Up Postgraduate Scholarships (\$7,083 2009) Neil C, Averbuj P.







Clinical Pharmacology Unit

Research Focus:

- Translating laboratory skills in therapeutic drug monitoring to the delivery of optimal testing for clinical care
- Perhexiline genetics and metabolism
- Studies involving the drugs used in organ transplantation to avert rejection
- Local anaesthetic drugs in post-operative pain management and fast-track surgery



Associate Professor Ray Morris

Overview

The laboratory relocated in July 2009 into The Basil Hetzel Institute (BHI), thereby forging more physical links with the laboratory-based research community at TQEH and beyond. To say that this relocation from the main hospital building was a breath of fresh air would be an understatement. What a wonderful facility we have for established research staff and for nurturing aspiring young researchers.

The focus this year continues established programs, often closely allied to our routine diagnostic drug-assay analytical work in patient care, but also unrelated pharmacological studies where the focus is delivery of translational outcomes that enhance medical care in our community. Our group has formal links in 2 of the new TQEH Research Foundation funded program grants, being the Renal Program Grant, and the Vascular Disease and Therapeutics Research Group.

A particular research highlight in 2009 has been the PhD awarded to Dr Ian Westley. This candidature has been a great pleasure to observe. Ian started in our laboratory as a Technical Officer, and then in recent years was promoted to Senior Medical Scientist. He initially enrolled in external part-time studies to gain his Science degree, then enrolled in a Masters and upgraded to a Doctorate (PhD). His project involved the complexities of the transplantation drug, mycophenolate, and the way various cellular transporters in liver cells handle this drug, including competitive effects of co-administered drugs also used in transplantation, and various rodent models. These drug-handling issues make clinical management of our renal transplant patients taking this drug complex. lan was given leave-of-absence to do post-doctoral work with a prestigious group in Belgium for 12 months, returning to TQEH/BHI in September. In this role, lan developed the method and implemented the national plasma concentrations monitoring of the anti-cancer drug Imatinib in Belgium.

Angina treatment

The department maintains an active research interest in the treatment of angina, particularly in patients receiving perhexiline, an older and very effective drug which can, however, cause serious liver and nerve toxicity if dosages are not individualised based on the testing provided in our lab. Our current research aims to better understand the mechanisms of action and fate of perhexiline in the body in order to translate this understanding into safer clinical use, and to develop new therapies for the treatment of angina. The project is currently supported by a PhD student, Mr John Licari, whose work is investigating the development of new drugs for the treatment of angina, based on our growing knowledge of how perhexiline works. John has identified two chemicals, similar to the current perhexiline medication and has completed testing their safety in animal models. He has shown that whilst one chemical is very similar to perhexiline and causes both liver and nerve damage, the other appears to have a much better safety profile. Testing is currently underway to determine whether this new drug is also effective in treating angina and other forms of heart disease. Some of John's work was presented in October at the North American meeting of the International Society for the Study of Xenobiotics.

Transplantation therapy

Our laboratory is part of a SA/NT team involved in a long-term strategy to provide pancreatic islet cell transplantation for the treatment of type-1 diabetes. Specifically, our role is to provide the national drug monitoring service in the national consortium. We acknowledge the hard work of the Juvenile Diabetes Research Foundation (JDRF) in making this funding available.

Clinical Pharmacology received major funding for 2009-2011 from the National Health and Medical Research Council to support a research scientist, Mr Ben Noll, who is assisting in a wide-ranging project investigating overall genetic factors that may influence the efficacy of immunosuppressant drugs and, hence, the incidence of rejection or organ toxicity. The project aims to recruit 200 kidney transplant recipients and their donors, and we are half way to our target of collecting sufficient

clinical, biochemical and genetic data to establish whether it may be possible to further reduce rejection and loss of the transplanted organ by individualising each patient's immunosuppressant medication based on their genetics and the genetics of the transplanted organ.

As alluded to above, the PhD study into the cellular mechanisms by which the liver handles mycophenolate and other drugs given to transplant recipients has now been completed. Dr Ian Westley has identified the MRP2 liver transporter protein involved in the elimination of mycophenolate and its metabolites from the body, and in addition, has generated evidence that mutations of MRP2 may affect an individual's risk of developing kidney damage.

Local anaesthesia and 'fast-track' surgery This project involves a PhD candidature of Ms Sumi Krishnan, and studies the potential to reduce or eliminate the use of narcotic analgesics for pain relief following either laparoscopic or open abdominal surgery by slowly trickling in local anaesthetic dorsal to the surgical incision site for 4 days following surgery using a commercial device called PainBuster®. The recruitment phase of this clinical trial (80 patients) was completed in late 2009. The work remaining includes the statistical analysis of a large amount of clinical and laboratory data, further laboratory work in the understanding of the handling of the infused local anaesthetic drug, including the changes that occur to protein binding of the drug following the 'stress' of surgery. This project also forms part of a 'fast-track surgery' protocol that is aimed at a win-win for the patient and health-care system by enhancing recovery post-surgery thereby allowing earlier discharge and reducing length of hospitalisation. The portable PainBuster® device allows freedom of movement of the recovering patients, so avoiding the confinement to a bed and connections to intravenous catheters and infusion pumps. This work is exciting in that our research can translate into direct benefits to patients in this way.



Staff

Chief Medical Scientist

RG Morris BSc PhD

Principal Medical Scientist

BC Sallustio BSc PhD

Senior Medical Scientist

IS Westley BMedSc PhD R Bright BSc(Hons)

Grant-Funded Scientist

B Noll BSc(Hons)

Technical Officers

FA Wicks BSc A Kalaitsidis BSc C Lang-Jones Cert Med Lab Sc D Dinow BSc

Administrative Officer

J Borosewicz BSc P Cardone

Completed thesis	
IS Westley BMedLabSc	PhD, University of South Australia, School of Pharmacy and Medical Sciences, 2009. Thesis: "Investigation of the interindividual variability in the disposition of mycophenolic acid and its ether and acyl glucuronide metabolites: metabolic and transporter effects"

Postgraduate Students

PhD Candidates				
J Licari BHSc(Hons)	"Investigation of the pharmacological effect of (-)- and (+)-perhexiline"			
S Krishnan BHlthSc(Hons)	"The clinical evaluation of fast-track surgery including extended local anaesthetic infusion for post-operative pain"			
Honours Candidate				

Honours Candidate	
Z MD Dom BHlthSc	"Metabolism of mycophenolic acid in human
	liver microsomes: effect of tacrolimus,
	cyclosporine and its metabolites"

Grants

Juvenile Diabetes Research Foundation. (Program grant) South Australian and Northern Territory Pancreatic Islet Isolation Program (SANTIP) (\$851,728 2008-2009) 2006 – 2009, Russ GR, Coates PTH, Morris RG, Sallustio BC, and all other members of SANTIP.

NHMRC. (Project grant) Pharmacogenomics of Renal Transplantation (\$114,750 2009) 2009-2011, Sallustio BC, Coller JK, Morris RG, Somogyi AA.

Surgical Synergies. Product support for patient local anaesthesia studies (approx \$70,000 2009), Morris RG, Hewett P, Karatassas A, Tonkin J.

TQEH Research Foundation Strategic Initiatives Funding. (Program grant) South Australian Translational Centre for Renal Research (\$180,000 2009) 2009-2011, Russ GR, PT Coates, S McDonald, Sallustio BC, Morris RG.

TQEH Research Foundation Strategic Initiatives Funding. (Program grant) Vascular Diseases and Therapeutics Research Group: Towards improved outcomes for Vascular Disease (\$180,000 2009) 2009-2011, Horowitz JD, Beltrame JF, Morris RG, Fitridge RA, Zeitz CJ, Wilson DP, Sallustio BC, Chirkov YY, Kennedy JA, Cowled PA.

TQEH Research Foundation/University of Adelaide Faculty of Health Sciences Divisional Postgraduate Scholarships (\$40,854 2009) 2007-2009 Licari J, Krishnan S.

TQEH Research Foundation Honours Research Scholarship (\$4,000 2009). MD Dom, Z.

DERMATOLOGY UNIT

Research Focus

• Clinical trials of new treatments to reduce actinic keratoses and skin cancers in renal transplant patients

Dr Warren Weightman



Overview

The Dermatology Unit assesses and treats skin disorders at The Queen Elizabeth Hospital (TQEH) in both outpatients and inpatients and teaches medical students, dermatology registrars, general practitioners and other doctors employed at TQEH. The unit is also involved in clinical research with an emphasis on different methods of treatment and prevention of sun damage and skin cancer. Dr Warren Weightman is a board member of the Australian Society of Dermatological Research.

We have been involved in five studies during 2009.

The first study is in association with the Renal Unit of TQEH. This is a 12 month open-label, randomized, multi-centre, sequential cohort, dose finding study to evaluate the efficacy, safety and tolerability of oral AEB071 versus Neoral in combination with Certican, Simulect and corticosteroids in de novo adult renal transplant recipients. The dermatology unit is doing the safety skin assessments.

The second study is in association with the Neurology Unit with the Dermatology Unit

doing safety skin assessments. The trial is a 24 month, double-blind, randomized, multi-centre, placebo-controlled, parallel-group study comparing efficacy and safety of FTY720 1.25mg and 0.5mg administered orally once daily versus placebo in patients with relapsing-remitting multiple sclerosis.

The third study is a multicentre, randomized, double-blind, placebo-controlled, phase II study to evaluate the safety and efficacy of subcutaneous bioresorbable implants of CUV1647 for the prophylactic treatment of pre-cancerous skin lesions of the head, forearms and hands in immune compromised, organ transplant patients.

The fourth study is a clinical trial looking at the efficacy and safety of 5% 5-fluorouracil cream in renal transplant patients for the treatment of actinic keratoses.

The fifth study is a clinical study looking at the presence and type of pain in Squamous Cell Cancers in renal transplant patients.

The unit is looking at doing further clinical trials in the future.

"The unit is also involved in clinical research with an emphasis on different methods of treatment and prevention of sun damage and skin cancer."

Staff Head of Department

W Weightman MBBS FRACP FACD

Visiting Dermatologists

P Selva MBBS FACD
A Lewis MBBS FRACGP FACD
YC Lee MBBS FACD

Dermatology Registrar

E Haverhock MBBS

ENDOCRINOLOGY UNIT

Research Focus

- Health care delivery
- Development of efficient strategies to diagnose and monitor diabetes and osteoporosis

Dr Pat Phillips



"The research is to identify the achievement of important diabetes management targets, the uptake of guidelines for diabetes management, the development of diabetes complications and strategies that are effective in improving care and reducing complications."

Overview

Translational research is our major research focus. Our work has been concentrated on the health care delivery and the development of efficient strategies to diagnose and monitor diabetes and osteoporosis, with the emphasis on directly dealing with complicated patient issues and improving the level of local general practitioners (GPs) and other health care professionals in regular chronic diseases management through evidence-based feedback. Support for our research has come from a wide range of government and private organisations.

Clinically we continue to use the diabetes patient dataset established since 1998 for research on the status of people who attend the unit's Diabetes Assessment Clinic (DAC). DAC provides patients referred by their GPs a "one stop shop" which includes checking for predisposition to diabetes, risk factors for complications, the complications themselves and current therapy. The research is to identify the achievement of important diabetes management targets, the uptake of guidelines for diabetes management, the development of diabetes complications and strategies that are effective in improving care and reducing complications. One key feature of our work is the established link and feedback mechanism to GPs referring their patients for both outpatient care and DAC care. This enables us to evaluate strategies to prompt/improve diabetes management by GPs. If successful, we will broaden the audience for these prompts on diabetes care and the areas they cover. The format and content of the feedback to GPs has been updated based on current research development in diabetes management in 2009.

In 2009 we continued the North West Adelaide Health Study in collaboration with other departments in The Queen Elizabeth Hospital, the Unit of Population Research & Outcome Studies of the Department of Health and the University of South Australia. The study population is a representative sample of residents in North West Adelaide, checking for risk factors and early indicators of chronic health problems, especially diabetes and cardiovascular and respiratory disease. The original cohort was first assessed in 2000 and has been reassessed twice with an interval of about 3 years to give longitudinal information on health status. We have used this dataset to assess the diabetes incidence, self and health system based management and changes of diabetes incidence/management, and finally the risk factors associated with aspects.

A comparative study is also underway to assess the comparability of diabetes patients in this population sample and the patient cohort in DAC dataset. The objective is to establish a patient base for studying the continuum of diabetes patient progress from early diagnosis to the late stage with full development of complications requiring hospital care. The psychological data of DAC patients is also assessed to be compared with the similar data in the population sample to explore the mental status of diabetes patients at different stage.

Alongside the quantitative data we also participate in studies assessing qualitative information including quality of life and the individual responses to changes in health status. These studies will give us data on the factors associated with improved, stable or worsening health status and ideas on how medical, self care and quality of life can be improved. The expansion of the study to cover Whyalla area and to include a cohort of children is also underway. These will give us insight into the chronic health status of country SA and children.

The president of the Henan Wujin General Hospital, China, visited the Endocrinology Unit and TQEH. The hospital has expressed a wish to collaborate with the unit in developing diabetes treatment strategies to combat the growing epidemic of diabetes in their province. Unit staff have been invited to give lectures in Henan Wujin General Hospital in 2010. It was also agreed that some doctors and researchers will be visiting and

conducting short term research in TQEH in the next few years.

Osteoporosis and associated fractures are a major cause of preventable disability and dependence for South Australians and a major cost to the community. Our good links with the community organisation Osteoporosis Australia, the Royal Australian College of General Practitioners and the Divisions of General Practice enable us to review the management of osteoporosis in the community. There are now osteoporosis education and awareness programmes in the western and northern metropolitan areas targeting those with osteoporosis, their health professionals and the general community.

We now have two dual Xray absorptiometer (DXA) scanners (at the Lyell McEwin and at The Queen Elizabeth Hospital). These meet the needs of the northern and western suburbs of Adelaide and associated country areas. Our combined services now see about 5,500 patients per year and we have a database containing records for over 26,000 individuals. A large proportion of these are being monitored for changes in bone density over time. This important source of clinical date provides the opportunity of investigating many aspects of the overall bone health of the communities that we service, and of long term trends and changes. With the addition of a specialist epidemiologist/statistician to our ranks, we are now in a position to undertake an assessment of this database with a view to publication.

We are working with Osteoporosis Australia to make osteoporosis a State health priority and to develop a strategic plan to reduce its impact in South Australia. We have been working with the Florey Adelaide Male Aging Study to measure bone density and body composition in a cohort of men selected from the northern and western regions of Adelaide. This is a longitudinal study and is now in its seventh year. Participants are followed up every five years. This study offers the opportunity to assess and analyse changes in both bone density and regional body composition as men age and we are currently accumulating data for future analysis. During 2009, a further cohort of follow up participants has been assessed and added to the database. We will review this database during 2010 and assess the results for potential publication.

Staff

Director

PJ Phillips MBBS MA MRACMA FRACP Grad Dip Hlth Econ

Medical Specialists

N Laddipeerla MBBS MD DNB (Endo) CG Beng MBBS MRC PATH MAACB Associate Physician (Clin Chemistry Dept)

Scientists

J Wang BSc MPH PhD C Seaborn BSc

E Bowen BSc

Ophthalmology

N Gehling BSc BMBS FRACO
M Goggin MB BCh BAO DO FRCSI (Ophth)
FRCOPhth PhD
J Runciman MB BHB FRACS FRACO
A Drew CRA (US)

Diabetes Centre Nurses

T Willson RN BN(Hons) Grad Cert Health (Diab Man and Ed) CDE

R Cox cn bn mn

M Hodgson RN RM BMid Grad Cert (Diab Ed)

D Barrow RN Grad Cert (Diab Ed)

C Nitschke RN RM Grad Cert (Diab Man & Ed)

R Wilson CN

R Gunadi BMgt BN MN RN DRN

Podiatry Service

D Brown DipAppSc Nursing BAppSc Podiatry D Filipak BAppSc Podiatry

Dietitians

M Campbell MNutrDiet C Stanton BSc DipEd MNutrDiet M Campbell MNutrDiet

Diabetes Outreach

J Giles Grad Cert(Diab Ed) MN (Advanced Prac) CDE

K Visentin

C Gilbert BA(Hons)

S Westlake

Administration

L Roberts

C Bouthémy DipHlthSc

J Grimsey

A Gazzard

V Watson

J Cocks

B Cummins

L Clark

"Osteoporosis and associated fractures are a major cause of preventable disability and dependence for South Australians and a major cost to the community."

"We are working with Osteoporosis Australia to make osteoporosis a State health priority and to develop a strategic plan to reduce its impact in South Australia."

GASTROENTEROLOGY AND HEPATOLOGY UNIT

Research Focus

- Intestinal growth and intestinal stem cells
- Coeliac disease
- Pathogenesis of bowel inflammation

Professor Ian Roberts-Thomson



"The study will investigate whether abnormal stem cells can be detected in the blood of patients who have had a bowel resection for cancer and whether this predicts recurrence of cancer"

Overview

Dr Adrian Cummins has completed the second year of his NHMRC project on the regulation of intestinal stem cells during growth of the small intestine. Rino Donato is the Research Assistant and Joshua Woenig is the Technical Officer on this project. The aim of this work is to identify growth factors that might be used to treat disorders such as short bowel syndrome both in children and in adults. The study is concentrating on the Wnt/beta catenin and Notch signalling pathways. Of 19 possible Wnt growth factors, at least two appear to be important in intestinal growth in rats. We were fortunate to obtain TQEH Research Foundation funding of \$160,000 for a laser microdissection microscope for The Research Institute to assist in this and other projects. This enables us to isolate the area around intestinal stem cells in a tissue section to determine cell markers and local growth factors. In order to translate this knowledge directly to humans, collaboration continues with Dr David Moore, Dr Richard Couper and Dr Paul Hammond from the Centre for Adolescent and Paediatric Gastroenterology at the Women's and Children's Hospital.

A second line of investigation concerns abnormal intestinal stem cells in colorectal cancer. Dr Cummins and Professor Ian Roberts-Thomson from this Department and Dr Jenny Hardingham from the Department of Haematology/Oncology were awarded a joint grant from the Cancer Council of South Australia. To assist in this project, Dr Phulwinder (Kumar) Grover has come to our Department from Flinders Medical Centre after completing a NIH grant. He has 25 years experience in research mainly in the field of kidney stones but is changing his focus to cancer research. Dr Cummins, Dr Grover and Dr Hardingham were fortunate to receive a further small grant of \$10,000 from TQEH Research Foundation to work on a particular marker of stem cells (OLFM4) in colorectal cancer as part of this larger study. Cancer stem cells may only make up 1% of cancer cells but

they are thought to be important as they are long-lived, accumulate mutations and have metastatic potential. The study will investigate whether abnormal stem cells can be detected in the blood of patients who have had a bowel resection for cancer and whether this predicts recurrence of cancer. These findings could be used to select a group of patients for further treatment with chemotherapy.

Dr Ilmars Lidums and Dr Adrian Cummins completed a study of the use of the PillCam capsule to assess the extent of bowel inflammation in patients with coeliac disease, both before and after treatment with a gluten-free diet. In a second study, capsule endoscopy was used to assess bowel inflammation in patients with positive coeliac serology but normal duodenal biopsies. These studies were presented by Dr Lidums at the Australian Gastroenterology Week in Sydney in October. Additional work related to coeliac disease is also being performed by Dr Guy Sander with help from Ms A Chua. Other collaborative studies involve Associate Professor Irmeli Penttila at the Women's and Children's Health Research Institute and Associate Professor Gordon Howarth from the Roseworthy Campus of the University of Adelaide. These collaborative projects involve the development of food allergy and the effect of probiotics on ameliorating inflammatory bowel disease in animal models. Dr Adrian Cummins was awarded the title of Clinical Associate Professor from the University of Adelaide during 2009. Nicola Eastaff-Leung was awarded a PhD for her thesis on regulatory and Th17 T cells in inflammatory bowel disease. Rino Donato was also awarded a PhD based on work done at Women's and Children's Health Research Institute.



Completed thesis

N Eastaff-Leung PhD, University of Adelaide, Department of Medicine, 2009.

Thesis: "Deficiency of immunoregulatory cells in Inflammatory

bowel disease".

PhD Candidates

J Fauser BSc(Hons) "The effect of probiotics on the small intestine"

L Prisciandaro "Novel probiotic supernatants and treatment of gastrointestinal

BSc Animal Sci (Hons) disorders"

Grants

NHMRC. (Project grant) The role of intestinal epithelium in gliadin peptide influx in celiac disease. (\$161,000 2009) 2008-1010, Sander G.

NHMRC. (Project grant) Regulation of intestinal stem cells and intestinal growth. (\$135,000 2009) 2008-1010, Cummins AG, Pentilla I.

NHMRC. (Complimentary Medicine Project grant). Novel probiotics and naturally sourced extracts as treatment strategies for chemotherapy-induced intestinal mucositis. (\$107,000 2009) 2008-2010, Howarth G, Butler R, Cummins AG.

The Cancer Council of South Australia. (Project grant) Investigation of Lgr as an

intestinal stem cell marker in health and disease. (\$101,000 2009) Cummins AG, Roberts-Thomson I, Hardingham J, Gibson R.

TQEH Research Foundation. (BHI facility Equipment grant) Laser dissection microscope. (\$160,000 2009) Cummins AG, Hardingham J.

TQEH Research Foundation. (Small grant 2009) Investigation of OLFMG positive stem cells in colorectal cancer. (\$10,000 2009) Cummins AG, Grover PK, Hardingham J, Price T.

University of Adelaide School of Animal and Veterinary Sciences Divisional Scholarship/Pork CRC Top Up Scholarship (\$25,427 2009) Fauser J.

GYNAECOLOGY, Department of

Research Focus

- Pelvic organ prolapse
- Essure sterilisation procedure
- Pelvic cancer



Dr Roy Watson



"All consultants in our department have an active role in clinical research activities and are supportive of our trainees undertaking suitable projects while working in our unit."

Overview

The Gynaecology department provides a comprehensive range of general gynaecological and subspecialist investigations and procedures with an emphasis on minimally invasive surgery, colposcopy, pelvic organ prolapse and urinary incontinence (urogynaecology), gynaecological oncology and management of severe endometriosis including close collaboration with our colorectal colleagues for severe pelvic disease. All consultants in our department have an active role in clinical research activities and are supportive of our trainees undertaking suitable projects while working in our unit. In 2009 the department continued to build personnel and funds to support future large trials particularly in the area of pelvic organ prolapse and related minimally invasive surgical treatments, including mesh vaginal repair; Essure sterilisation and gynaecological oncology. However, Dr Chris Barry continues to promote a more diverse interest in pelvic floor disorders with interest in natural remedies and molecular mechanisms related to bladder inflammatory disorders.

Research interests include final assessment of vaginal mesh repair trials into uterine conservation; new approaches to imaging pelvic organ prolapse and novel treatments for interstitial cystitis.

Dr John Miller, Senior Visiting Gynaecological Oncologist, has involved our department in multicentre investigations with the University of Adelaide into the psychological aspects of recurrent cancer and the development of patient decision aids as well as continuing to recruit patients for chemotherapy and surgical trials centred at the Royal Adelaide Hospital.

Dr Amita Singla has commenced a trial examining the effectiveness of women self-collecting Pap smears aimed at improving compliance.

Drs Barry and Munday are coordinating the hospital's arm of a multi-centre prospective

randomised trial of vaginal mesh repair for the correction of cystocele (MAP study). Dr Paul Duggan at the Royal Adelaide Hospital is the principal investigator.

Dr Monika Juneja, recently appointed as VMS in Gynaecology, is investigating the role of hysterectomy in prolapse repair with a seeding grant from the Australian Gynaecological Endoscopy Society Research Committee. Her term supervisors are Drs Barry and Munday.

The POPPY study is an international collaborative multi centre randomised study to investigate the use of pelvic floor muscle strengthening for female pelvic organ prolapse. Dr Barry is TQEH's researcher in this study. Dr Barry is also trialling the use of herbal preparation R1962 for the reduction in recurrence of urinary tract infections in women.

Dr Munday and Dr Jane Fielder (Senior Registrar) have commenced a study comparing various imaging techniques following the Essure female sterilisation procedure.



HAEMATOLOGY AND MEDICAL ONCOLOGY, The combined Departments of

Research Focus

- Identification, development and clinical trial of new therapeutic agents for the treatment of cancer
- Further understanding of the mechanisms underlying solid cancers and haematological disease, particularly myeloproliferative disorders and leukaemia
- Development of new cancer diagnostic assays

Associate Professor Peter Bardy



"The focus of activity in relation to transfusion and anaemia involves clinical practice improvement projects to optimise the management of pre-operative anaemia and reduce transfusion rates in orthopaedic and colorectal surgery."

Clinical research

The clinical trial program involves Phase I. II and III trials of new therapeutics. Ongoing studies are investigating chemotherapeutic agents, new supportive therapies (cytokines, erythropoietic agents), novel molecular targeted agents (EGFR, VEGF and mTOR inhibitors) and antithrombotic agents. Currently there are over thirty active clinical trials available to patients within the unit. These include investigator driven, cooperative group and pharmaceutical driven Phase I to Phase III studies. Over 15% of patients are ultimately entered in clinical trials well above the recommended 10% target. The unit consists of Medical Oncologists, Haematologists, eight Clinical Trials Co-ordinators and a dedicated Clinical Research Fellow. Trial results from our unit have been presented by our team at this years American Society of Clinical Oncology, ESMO and NCI-EORTC Meeting and include work with anti-angiogenic therapy combined with chemotherapy and Phase I results of NPI-0052, a novel proteasome inhibitor. In addition, collaboration with the Basil Hetzel institute has allowed clinical trial tissue banks to be used with the aim to explore the EGFR pathway in correlation with clinical outcomes.

The unit also has a special interest in non-malignant haematology including thrombosis and haemostasis (Dr Simon McRae) and transfusion, anaemia, iron deficiency and blood conservation (Dr Kathryn Robinson, Dr Uwe Hahn & A/Prof Peter Bardy).

The focus in thrombosis management is the use of new anticoagulants. This work involves company sponsored as well as investigator-led trials.

The focus of activity in relation to transfusion and anaemia involves clinical practice

improvement projects to optimise the management of pre-operative anaemia and reduce transfusion rates in orthopaedic and colorectal surgery.

At a national level, Dr Kathryn Robinson coordinated the first meeting of an Iron Deficiency Anaemia Expert Group to help to identify barriers to improvement, future research directions and national priorities. The group currently has a review article on iron deficiency anaemia underway for submission to the MJA. A/Prof Peter Bardy and Dr Kathryn Robinson have also been involved in a randomised controlled trial of oral iron replacement in female blood donors conducted by the Australian Red Cross Blood Service.

A/Prof Peter Bardy, through his links with the Tissue Typing Laboratory, has been collaborating with the Renal Unit to optimize the management of sensitized patients having renal transplants.

Laboratory-based studies

Project 1: Molecular-genetic approaches to identify lesions in myeloproliferative neoplasms (A/Prof R D'Andrea, A/Prof P Bardy, Dr P Neufing, Ms C Butcher)

We have focused on the myeloproliferative neoplasm (MPN) Polycythemia Vera (PV), a hematological disease in which the bone marrow produces increased numbers of several haemopoietic cell types (red blood cells, white blood cells and platelets). This disease is of particular interest to us as the multilineage effects are associated with a dysregulation of haemopoietic stem cell growth and normal blood cell growth factor responses. An acquired mutation is present in a high percentage of PV patients.

This mutation affects the activity of the intracellular signaling molecule JAK2 which plays a critical role in normal growth factor responses. Whilst the JAK2 mutation is clearly important, several studies indicate additional genetic events are involved in the initiation and progression of MPN. We have identified the gene RUNX1 as a likely candidate for involvement in PV and have screened this gene for mutations in a number of PV patients. We have identified a RUNX1 mutation in a PV patient who developed leukaemia. This is the subject of a manuscript currently in preparation.

We are also using several genome-wide approaches to identify other genes that may be involved in initiation or progression of disease. In collaboration with Dr Charles Mulligan (St Jude's Research Institute, Memphis, USA) we are presently conducting a Single Nucleotide Polymorphism (SNP) array comparing paired affected and unaffected tissue from PV patients to identify altered chromosomal regions. From these regions we have prioritised and screened several genes for mutations in PV patients. We are currently screening a cohort of normal individuals to investigate the significance of mutations detected in PV patients.

Project 2: Australian Familial Hematological Cancer Study (AFHCS) (A/Prof R D'Andrea, A/Prof P Bardy) Studies of families showing single gene inheritance for predisposition to hematological malignancies will facilitate the identification of the genes and mechanisms involved in the first steps of these cancers. This has been a successful approach to the identification of genes implicated in solid tissue cancers. In collaboration with Prof Hamish Scott and Dr Graeme Suthers we have identified a number of South Australian kindreds with familial hematological malignancy, recorded pedigree data, collected clinical and demographic data about family members, and stored biological samples (blood, tissue) from both affected and unaffected family members. Having identified these families of interest, and excluded the involvement of known predisposition genes, we are now using sophisticated genetic approaches to identify new genes underlying the early events in hematological malignancy. We are now

characterizing a novel mutation present in three families, including a large South Australian family.

Project 3: MAX Translational Sub-study: Determination of biomarkers to predict resistance or sensitivity to anti-angiogenic monoclonal antibody therapy in colorectal cancer (Dr J Hardingham, A/Prof T Price, Dr A Townsend)

Recent developments in the use of novel targeted therapies to treat colorectal cancer, such as monoclonal antibody therapy (bevacizumab) inhibiting the vascular endothelial growth factor (VEGF), offer promise in improving patient outcomes. The identification of biomarkers that predict which patients will benefit from such therapy can significantly aid in tailoring treatment for each patient to improve efficacy and reduce the toxicity and cost of treatment. Activation of the EGFR in colorectal cancer results in cell signalling via several pathways including the PI3K/AKT and RAS/MEK/ERK pathways, which regulate cell proliferation, survival and importantly, production of angiogenic factors. There is a complex interaction between the EGFR signalling pathways and tumour angiogenesis. EGFR activation results in the phosphoactivation of downstream molecules and increased production of multiple angiogenic factors including VEGF and interleukin 8. Given the effect of constitutive activation of the EGFR signalling pathways on prognosis, and the effect of mutant KRAS/BRAF and loss of PTEN on the induction of VEGF and other angiogenic factors, the aim is to investigate the association of mutant KRAS/ BRAF and loss of PTEN on the response to bevacizumab. We also aim to investigate the relationship between the activation of the downstream molecules AKT, IL-8 and HIF-1, and the response to bevacizumab. We have analysed 148 samples to date for KRAS mutations using high resolution melting (HRM) and found 55/148 (37%) mutant. We have also developed a highly sensitive novel technique to detect BRAF mutations using HRM and a discriminatory probe. Sample testing and validation by sequencing is underway.



"We are now characterizing a novel mutation present in three families, including a large South Australian family."



"The presence of high levels of PCK8 is thought to protect the cells from apoptosis (cell death) and this may be important in predicting patients' tumour response to apoptosis-inducing therapeutic agents used to treat advanced colon cancer."

Project 4: Discovery of biomarkers for diagnostic and therapeutic applications in colorectal cancer

(Dr J Hardingham, Prof P Hewett) Patients diagnosed with early stage colorectal cancer (TNM stage I or II) undergo surgical tumour resection with curative intent, yet up to 30% of these patients suffer recurrent or metastatic disease within five years of surgery. This suggests that an occult metastatic disease process was already under-way, or that viable tumour cells with proliferative and metastatic potential had been shed from the primary tumour site during surgical resection. We have shown by immunobead RT-PCR that circulating tumour cells (CTC) detected at diagnosis using a panel of five biomarkers predict later relapse. However the test showed only 80% specificity. Our aim is to discover better tumour biomarkers for colon tumour cells. To this end we have investigated the molecule SET and found it to be up-regulated in 75% tumours compared to normal bowel tissue. It has been included in the biomarker panel for the detection of CTC. To date blood and lavage samples have been collected from sixty seven colorectal cancer patients and from 21 controls and analysis for CTC is proceeding.

SET was also investigated as a therapeutic target as its main function in colon cancer is to inhibit the tumour suppressor protein PP2A, thus promoting tumour growth. Knocking out SET expression by RNA interference showed that several tumourpromoting target proteins including β-catenin were down-regulated, however these beneficial effects may be over-ridden by the increased expression of the tumourpromoting oncogene ETS2. Further work is needed to confirm this finding and to assess concomitant knockdown of ETS2. Another biomarker found over-expressed in 65% of colon tumours is phospho-CK8 (PCK8). The presence of high levels of PCK8 is thought to protect the cells from apoptosis (cell death) and this may be important in predicting patients' tumour response to apoptosis-inducing therapeutic agents used to treat advanced colon cancer. This work was a joint collaboration with Flinders and Adelaide Proteomics facilities.

Project 5: Detection of occult disseminated tumour cells and tumour DNA (Dr M Raynor, A/Prof K Pittman) We are studying the significance of circulating tumour cells in patients with early stage operable breast cancer and monitoring the presence of occult disease (circulating tumour cells and tumour DNA in the plasma) at regular intervals after surgery. To isolate circulating tumour cells we make extensive use of the Immunobead RT-PCR method, which was previously established in this department. In addition, plasma is separated from the blood samples for the detection of tumour DNA using methylation markers. The immunobead RT-PCR method has now been adapted for a high-throughput platform to allow quantitation, faster processing of samples and clear distinction between specific and background amplification. Ten experimental gene markers and three housekeeping gene markers have now been fully optimised and validated for tumour cell detection. The utility of methylation as a tumour marker has been demonstrated by several studies and we have established methods for detecting DNA originating from tumour cells and for analysing several genes previously shown to be commonly methyl-

Staff

Chair of the combined Departments of Haematology and Medical Oncology

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ated in breast cancer cells.

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A Barr

3rd year Physiology (University of Adelaide) lab placement (J Hardingham group)

S Li

H Kakavand

J Gordon

D Lim

J Ashby

Collaborators

(1) Internal (TQEH):

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Mr N Rieger, Colorectal Surgical Unit, Department of Surgery, The Royal Adelaide and Queen Elizabeth Hospitals, Adelaide

Mr D Walsh, Breast/Endocrine Unit, Department of Surgery, The Queen Elizabeth Hospital, Adelaide

(2) Other local and National:

A/Prof S Barry, Department of Paediatrics, University of Adelaide, Adelaide Dr G Suthers, Familial Cancer Unit, Adelaide Women's and Children's Hospital

Dr T Chataway, Flinders Proteomic Facility, Flinders University

Prof LB To, Department of Haematology, Institute of Medical and Veterinary Science, Adelaide

Ms M Wallwork and Mr J Terlett, Adelaide Microscopy

Prof AF Lopez, Division of Human Immunology, Institute of Medical and Veterinary Science, Adelaide

A/Prof A Dobrovic, Molecular Pathology Research, Department of Pathology, Peter MacCallum Cancer Centre, Melbourne

Postgraduate Students

PhD candidates		
G Arentz	"Characterisation of protein biomarkers for diagnostic and therapeutic	
	applications in colorectal cancer"	
C Kok	"Identification and functional analysis of common gene expression	
	changes between myeloid leukaemia datasets"	
N Rao	"Mutations in RUN X1 in Polycythemia Vera"	





Dr I Lewis, Department of Haematology, Institute of Medical and Veterinary Science, Adelaide Prof T Gonda, Diamantina Institute, for Cancer, Immunology and Metabolic Medicine, University of Queensland, Brisbane Dr H Scott, Walter and Eliza Hall Institute, Victoria

(3) International:

Dr C Mullighan, St. Jude Children's Research Hospital, Memphis, Tennessee, USA

Grants

Amgen. Phase II study of second line therapy with Irinotecan, Panitumumab and Everolimus in metastatic colorectal cancer with KRAS wild type. (\$100,000 2009) 2009-2010, Townsend A, Hardingham J, Price T.

Australian Research Council. (Linkage Project) Differentiation of cord blood stem cells into thymus (T) cells with regulatory phenotype and function. (\$100,000 2009) 2009-2011, Barry SC, Zola H, D'Andrea RJ, Lewis I.

Cancer Australia. PETACC 6 trial, neoadjuvant chemotherapy for T3/T4 rectal carcinoma. (\$159,266 2009) 2008-2010, Price TJ et al.

Haemophilia Foundation Research Fund. Thrombin Generation in Patients with Discrepant Haemophilia A. (\$20,000 2009) McRae S.

Inner Wheel Australia. Optimisation of cord blood stem cell differentiation into T cells with regulatory phenotype. (\$62,500 2009) Barry SC, D'Andrea RJ, Lewis ID.

Merck Sorono Pharma. EGFR pathway assessment in patients receiving anti angiogenesis therapy. (\$30,000 2009) 2008-2009, Price TJ, Townsend A, Hardingham J.

NHMRC. (Project grant) Dissecting FLT3 signalling in acute myeloid leukaemia. (\$159,500 2009) 2007-2009, D'Andrea R, Gonda T.

NHMRC. (Project grant) Functional validation of FoxP3 target genes in human regulatory T cells. (\$200,200 2009) 2009-2011, Barry SC, Shannon F, Zola H, D'Andrea R.

NHMRC. (Project grant) Molecular genetics of Polycythemia Vera. (\$198,500 2009) 2008-2010, D'Andrea R, Scott H, Bardy P, Melo J.

NHMRC. (2009 Equipment grant) The role of renal dendritic cells in infection under immunosuppression. (\$11,848 2009) Coates PTH, D'Andrea R.

The Cancer Council of South Australia. (Project grant) A new prognostic multi-marker assay for early stage bowel cancer (\$89,750 2009) Hardingham JE, Chataway T, Hewett P, Price T.

The Cancer Council of South Australia. (Project grant) Familial blood cancers (\$101,500 2009) Scott H, D'Andrea RJ, Suthers G, Bardy PG, Hughes T, Lewis ID, Mullighan CG, Hahn C.

The Cancer Council of South Australia. (Project grant) KLF5 function in Acute Myeloid Leukaemia (\$98,000 2009) D'Andrea RJ, Brown A, Mullighan C, Bardy P.

The Queen Elizabeth Hospital. (Haematology-Oncology Scheme A grant) EGFR pathway assessment in patients receiving anti angiogenesis therapy. (\$20,000 2009) Hardingham J, Townsend A, Price T.

The Queen Elizabeth Hospital. (Haematology-Oncology Scheme A grant) Detection of occult disseminated tumour cells and tumour DNA. (\$60,000 2009) Raynor M.

The Queen Elizabeth Hospital Research Foundation. (Small grant 2009) Identification of mutations in molecules which package DNA in leukemia and pre-leukemic disease. (\$18,000 2009) D'Andrea R, Neufing P, Butcher C.

The Queen Elizabeth Hospital Research Foundation. (Small grant 2009) Determination of biomarkers of resistance/sensitivity to Cetximab therapy in colorectal tumour cell lines using expression profiling PCR arrays. (\$4,000 2009) Hardingham J, Price T.

The Queen Elizabeth Hospital Research Foundation. (Small grant 2009) Investigation of OLFMG positive stem cells in colorectal cancer. (\$10,000 2009) Cummins AG, Grover PK, Hardingham J, Price T.

The Queen Elizabeth Hospital Research Foundation/Department of Haematology-Oncology. (Postgraduate Scholarship) (\$18,724 2009) Rao N.

New grants awarded for 2010

Leukaemia and Lymphoma Society of USA. The role of OCT-1 Activity enhancers in improving the response of patients with low OCT-1 activity to imatinib (US\$200,000 2010) 2010-2012, White D, Hughes T, D'Andrea RJ, Somogyi A, Melo J.

NHMRC. (Project grant) Klf5 function in normal and leukaemic haemopoiesis (\$209,500 2010) 2010-2012, D'Andrea RJ, Mullighan C, Lewis ID, Jenkins N.

NHMRC. (Project grant) Dissecting the role of the IL-3 receptor alpha subunit and beta-catenin in Acute Myeloid Leukaemia (\$187,500 2010) 2010-2012, D'Andrea RJ, Ramshaw H, Ekert P, Lewis ID, Barry SC.

Awards

K Robinson. SA Health Award 2009: Dr Kathryn Robinson on behalf of the SA BloodSafe Program.

Acknowledgments

The Department of Haematology - Oncology would like to thank AIB Labs, the Australian Red Cross Blood Service, The Cancer Council of South Australia, The Queen Elizabeth Hospital Research Foundation, The Familial Cancer Unit - Children, Youth & Women's Health Service, the National Health and Medical Research Council, Flinders University and the University of Adelaide for their generous support of this research.





The Institute

basil hetzel institute for medical research

The Queen Elizabeth Hospital and The University of Adelaide gratefully acknowledge the significant donation by Professor Basil Hetzel AC for this cryogenic facility. The scope of our laboratory and clinical research is greatly enhanced by this generous gesture.

October 2008

INTENSIVE CARE UNIT

Research Focus

- Sepsis studies
- Observational surveys
- Patient safety
- Nutrition studies
- Outcome studies
- Statistical method reviews

Associate Professor Sandra Peake



"The ARISE study has been awarded \$2.4 million by the NHMRC and is being conducted over 2.5 years through the Australian and New Zealand Intensive Care Centre Research Centre, Department of **Epidemiology** and Preventive Medicine, Monash University."

Sepsis Studies Australasian Resuscitation In Sepsis Evaluation (ARISE)

ARISE is a phase III, multi-centre, ANZICS CTG-endorsed, randomised, controlled study evaluating early goal-directed therapy in 1600 patients presenting to the Emergency Department with severe sepsis in 35 Australian, New Zealand and Hong Kong hospitals. The study has been awarded \$2.4 million by the NHMRC and is being conducted over 2.5 years through the Australian and New Zealand Intensive Care Centre Research Centre, Department of Epidemiology and Preventive Medicine, Monash University. Associate Professor Sandra Peake is the Chair of the ARISE Management Committee and Patricia Williams is the Research Coordinator representative on the ARISE Management Committee. The study commenced at TQEH in October 2008 and is collaboration between the Emergency Department and the Intensive Care Unit. The Queen Elizabeth hospital is currently the highest recruiting site.

An economic evaluation of resuscitation in sepsis

An economic evaluation of the multicentre, ARISE randomised controlled trial of early goal-directed therapy in patients presenting to the Emergency Department with severe sepsis will be conducted in a cohort of patients randomised to the ARISE RCT. Cost per quality life year gained will be evaluated. The study was awarded a \$100,000 grant from the Intensive Care Foundation in November 2008 and commenced in 2009.

STATInS: Study of atorvastatin therapy in sepsis

A phase II randomised controlled trial of atorvastatin therapy in intensive care

patients with severe sepsis. The study is NHMRC-funded and is being performed under the auspices of the ANZICS CTG. The purpose of this study is to assess the effects of atorvastatin on the biological and clinical outcomes of adult intensive care patients with severe sepsis. The study will establish whether a definitive phase III trial in Australia and New Zealand is feasible and justifiable, and will provide essential information on the cost and likely sample size for such a trial. Recruitment commenced November 2007 and is due for completion in June 2010.

A controlled comparison of eritoran tetrasodium and placebo in patients with severe sepsis

A multi-centre, international, industrysponsored randomised, double-blind, placebo-controlled study. The purpose of this research study is to assess the safety and efficacy of an experimental drug called eritoran tetrasodium (eritoran) in patients with severe sepsis. Eritoran belongs to a group of drugs called Lipid A antagonists. Previous studies have indicated that eritoran works by blocking the effect of toxic products and by reducing the production of inflammatory chemicals that can contribute during an infection to the symptoms of sepsis. The study will also measure how health care costs are affected by its use. The study commenced in May 2007 and continued in 2009.

Sepsis and DIC

A multi-centre, industry-sponsored randomised, double-blind, placebo-controlled, Phase-2B study is underway to assess the safety and efficacy of a drug called ART-123 on subjects with sepsis and disseminated intravascular coagulation. ART-123 is thought to act by stopping thrombin-mediated clotting and enhancing

Protein C activation at the site of clotting rather than systemically; thereby reducing the risk of bleeding. Recruitment at TQEH completed in 2009.

Efficacy and Safety of Drotrecogin Alfa (Activated) in Adult Patients with Septic Shock

A randomized, double-blind, placebocontrolled, multicenter, Phase 3 study of drotrecogin alfa (activated) administered as a continuous 96-hour infusion to adult patients with septic shock commenced in 2008. The purpose of this placebocontrolled study is to determine if drotrecogin alfa (activated) treatment provides significant mortality reduction and organ function improvement in patients with septic shock compared with placebo treatment in patients receiving the current standard of care for septic shock. This study will also assess the effectiveness of drotrecogin alfa (activated) in reducing 28-day mortality in patients with septic shock and concomitant severe protein C deficiency at baseline. Recruitment commenced August 2008 and continued in 2009.

Observational Studies STATInS TIME (Time-In-Motion Evaluation) Study

A time and motion evaluation study of a phase II randomised controlled trial of atorvastatin therapy in intensive care patients with severe sepsis (STudy of Atorvastatin Therapy In Sepsis). This sub-study is a prospective, observational, time-in-motion evaluation study using a real-time daily management log to document the time required by Research coordinators to perform all aspects of the STATInS study. The findings from this study will assist with the understanding of the time required to perform the coordination of a research project. This knowledge may be used at a local level for sites to project and justify operating costs of local personnel and to assess the economic feasibility of a study. This information will also be used to inform the planning and design of future studies and to provide more accurate staff cost estimates for future grant applications.

TAME: An Audit of the Time and Financial Costs involved in the Review Process of Multi Centre Clinical Trials in Australia and New Zealand

The TAME (Time And Money Evaluation) project is an observational study of important aspects of the scientific and ethical review of multi-centre medical research in intensive care across Australia and New Zealand. This study aims to compare between existing systems of local committees versus centralized authorities the overall duration of the scientific and ethics approval process for one or more clinical trials seeking contemporaneous approval in Australia and New Zealand. Also to be compared between local and centralised approval systems are the fees charged for the approval process, and an estimate of the direct time required preparing and supporting the review process by local research staff at each participating site. It is planned that the TAME study will examine two projects seeking approval, these being firstly an investigator-initiated study and secondly a commerciallysponsored study. This study is endorsed by the ANZICS CTG and received funding from the Intensive Care Foundation. Mrs Patricia Williams (TQEH ICU Research Coordinator) is a member of the study Management Committee.

Prolonged QT interval in the ICU-incidence, risk factors and outcome, a prospective multi-centre observational study

This study is being undertaken to determine the incidence of prolonged QTc interval and QTc dispersion in critically ill patients admitted to the ICU. The study aims to identify associated risk factors, compare cardiac and non-cardiac complications, mortality, length of ICU and hospital stay in patients with prolonged QTc interval and QTc dispersion. This study was done in collaboration with the Royal Adelaide Hospital Intensive Care Department. Preparation is underway to submit the results of this study for publication.

The epidemiology of radiocontrast exposure in critically ill Australian adults: a prospective, multi-centre, observational study

A study to determine the incidence of intravascular radiocontrast (contrast) nephropathy following exposure to contrast

"The study aims to identify associated risk factors, compare cardiac and non-cardiac complications, mortality, length of ICU and hospital stay in patients with prolonged QTc interval and QTc dispersion."

"The survey aims to gain a better understanding of both strengths related to patient safety and areas for improvement as well as *Implementation* of targeted improvement activities in focal areas that have the potential to improve patient care."

among adults admitted to Intensive Care Unit's (ICU) in Australia is completed. This study is in collaboration with the Royal Prince Alfred Hospital Intensive Care Unit. Preparation is underway to submit the results of this study for publication.

Point Prevalence Program

The Point Prevalence Program, performed under the auspices of the ANZICS CTG, aims to provide the structure for individual researchers to conduct basic observational Point Prevalence Studies to inform future research, while minimising the workload on participating ICUs by combining studies using a common and standardised Case Report Form, on predictable dates. The two studies conducted in 2009 where an evaluation of the implementation of "Process of Care" practices in your ICU and an evaluation of temperature management practice for patients with acute brain syndromes. This program is funded by the Intensive Care Foundation.

Nutrition Studies Early total parenteral nutrition

A multi-centre, level 1 randomised, controlled trial comparing early total parenteral nutrition to standard nutritional support in the critically ill patient was commenced in December 2006. The study is NHMRC-funded and is being performed under the auspices of the ANZICS CTG. Associate Professor Peake is an associate investigator and member of the study Management Committee.

Patient Safety

Assessing the safety of a continuous potassium chloride infusion in critical care: A randomised controlled trial

This prospective non-blinded, randomised, controlled trial aims to ascertain whether administration of potassium chloride is safer by intermittent or continuous infusion. Recruitment completed in September 2009 and data analysis is underway. Funding was received from The Queen Elizabeth Hospital Research Foundation to assist with this study.

Comparison of haemodynamic effects of paracetamol in the critically ill

A randomised, controlled trial assessing the safety and haemodynamic effects of intravenous paracetamol (versus enteral paracetamol) in intensive care patients continues. The study is funded by a \$15,000 grant from the Intensive Care Foundation.

Understanding the safety culture in Australian Intensive Care Units: establishing a baseline for quality improvement

A survey of the safety culture in Australian Intensive Care Units (ICUs) was conducted in 2009 by a sub-group of the Quality Advisory Panel of the Australian College of Critical Care Nurses (ACCCN). This was funded by ACCCN, the Australian and New Zealand Intensive Care Society (ANZICS) and the Research Centre for Clinical and Community Practice Innovation. The survey aims to gain a better understanding of both strengths related to patient safety and areas for improvement as well as Implementation of targeted improvement activities in focal areas that have the potential to improve patient care. Bernadette Grealy, Clinical Service Coordinator, Intensive Care Unit is a co-investigator for this study.

Outcome Studies Radiocontrast-induced nephropathy in ICU patients

A retrospective study examining the incidence of, and risk factors for, radiocontrast-induced nephropathy in ICU patients has been completed. Preparation is underway to submit the results of this study for publication.

Outcome from Idiopathic Pulmonary Fibrosis

A retrospective study examining the outcome of patients with idiopathic pulmonary fibrosis admitted to ICU for respiratory failure has been completed. Published in Critical Care & Resuscitation 2009.

Gentamicin and creatinine clearance

In conjunction with Dr Terry Jones, Pharmacy Department, a prospective observational study comparing various modes of creatinine clearance in ICU patients, including the clearance of gentamicin is completed. Published in Anaesthesia and Intensive Care, December 2009.

Gentamicin-computer derived dosing and clearance in ICU

In conjunction with Dr Terry Jones (Pharmacy) this study is examining the

benefits of using a computer derived dosing schedule and creatinine clearance estimates for all patients prescribed gentamicin in the Intensive Care Unit. This study is continuing.

The application of advanced statistical techniques in the analysis of outcome data

A number of studies are ongoing defining the role of advanced statistical analysis in outcomes research and meta-analysis.

The correlation between waist circumference and outcomes in critically III patients

The study is a prospective, single centre, epidemiological study to be conducted over a 12 month period involving patients who are admitted to the intensive care unit for more than 24 hours. The study aims to determine whether there is a correlation between waist circumference and morbidity, ICU mortality, 28 day mortality, hospital mortality and 6 monthly mortality in critically ill patients. Recruitment is due for completion July 2010.

Discharge and Readmission Evaluation study (DARE)

A multi-centre prospective observational study (audit) of consecutive patients discharged from the ICUs of hospitals in Australia and New Zealand and is being performed under the auspices of the ANZICS CTG. The study aims to enrol 10,000 patients over a 2-3 month period utilising information specific to patients and to institutions to assess the relative impact of factors on patient survival to hospital discharge. The DARE Study aims to identify the patient and system factors that increase preventable morbidity and mortality in patients who are discharged alive from ICU. Recruitment was completed in December 2009.

Infinite

An inception-cohort study was conducted in all Australian and New Zealand intensive care units (ICUs) during the winter of 2009. This project involved the establishment of a real-time registry and the collection of clinical health information in patients with influenza A infection (including patients with novel H1N1 2009) admitted to the Intensive Care Unit. This study will assist planning for the treatment of infection with

the 2009 pandemic influenza A (H1N1) virus through health care systems in developed countries during winter in the Northern Hemisphere. A/Professor Sandra Peake is a member of the study Management Committee. The results of the study thus far were published in the New England Journal of Medicine in October 2009. The study will continue into 2010.

Studies on the critically ill represent co-operative undertakings between all the Nursing and Medical staff in the Intensive Care Unit. Many thanks to our Research Coordinator, Mrs Patricia Williams.

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Director

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L Sheffield RN IntCCert

E Williams RN IntCCert

Studies have also been undertaken in collaboration with Dr Terry Jones, Pharmacy, TQEH and Dr Tobias Otto, TQEH Emergency Department and the Royal Adelaide Hospital and Royal Prince Alfred Intensive Care Units.

"The study aims to enrol 10,000 patients over a 2-3 month period utilising information specific to patients and to institutions to assess the relative impact of factors on patient survival to hospital discharge."



MEDICINE, University of Adelaide Discipline of

Research Focus

From genes and cells to population health

- Basic research studies of the physiology of zinc in the respiratory system
- Population research on chronic disease
- Patient safety and quality improvement
- Nutritional problems affecting older people
- · Health Services and systems research
- Undergraduate and postgraduate assessment



Professor Richard Ruffin

Overview

The Department of Medicine has major involvement in Undergraduate and Postgraduate teaching and training; undergraduate and postgraduate curriculum development and undergraduate postgraduate assessment, basic and applied research; clinical service and management. Members of the department are involved in basic science research, clinical research, and epidemiological research across the disciplines of Neurology, (see Neurology Report), Ageing, Cardiology (see Cardiology report), chronic diseases and risk factors; and population health. Workplace based assessment is being developed progressively with training modules and calibration exercises.

A/Prof Renuka Visvanathan is the Director of the Aged and Extended Care Services at The Queen Elizabeth Hospital (TQEH) and has established a research program in ageing, in particular nutritional frailty. In 2009, she was awarded the Australia and New Zealand Society for Geriatric Medicine Lundbeck Fellowship. As part of this fellowship, she attended a one week seminar on depression and dementia in Denmark. She also visited three geriatric medicine centres in the United Kingdom. 2009 has also been a successful year in terms of research grants success with two NHMRC grants being awarded to commence in 2010. She was also part of the MNA International Initiative which developed an improved nutritional screening tool- the Mini Nutritional Assessment Short Form. A Prof Visvanathan is also a chief investigator with the Health Observatory based at the Queen Elizabeth Hospital. This team was successful in securing a \$1.25 million five year program grant from The Queen Elizabeth Research Foundation in 2009.

Professor Richard Ruffin is involved in studies on asthma and COPD epidemiology, and continuing a population health study examining chronic diseases (diabetes, obesity, asthma, COPD, cardiac risk factors, renal disease) within the North Western Adelaide population. This work is defining incidence, severity, undiagnosed disease prevalence, and the burden of disease in the population. A linked data set is facilitating this work. The cohort is providing material to look at genetic links to disease and risk factors. Research of educational assessment at the undergraduate and postgraduate level has commenced, and will provide an evidence base for future junior doctor training. Workplace based assessment training modules for national application and national calibration are being developed.

A/Prof Bob Adams is the Director of The Health Observatory in The Institute (BHI). Along with co-investigators at TQEH and collaborators elsewhere, The Observatory is continuing work on a number of issues related to healthy ageing and chronic disease, using population health data as a basis for developing community-based intervention trials. He is continuing work on the second phase of the ARC-funded Nutrition, Obesity, Lifestyle and Environment Study (NOBLE) examining the effect of obesity on "baby boomers" and workforce participation. A/Prof Adams has a major interest in health literacy and is the Chair of the South Australian Health Literacy Alliance. He is collaborating with colleagues in Switzerland and across Europe in several projects looking at the relationship of health literacy and health outcomes. A/Prof Adams is a chief investigator on a major NHMRCfunded project that will look at the relationship between cardiac disease in men and

"Research of educational assessment at the undergraduate and postgraduate level has commenced, and will provide an evidence base for future junior doctor training."

TQEHresearch Research Report 2009

"The North West
Adelaide Health
Cohort Study
(NWAHS), a
population study of
chronic disease now
in its tenth year of
follow up,
has contributed
substantially to
chronic disease
research."

the effects of sex steroids, obesity and other novel factors such as endocrine disruptors. He is also a chief investigator on two NHMRC-funded projects led by Prof Mark Daniels at University of South Australia that will examine the relationship between space and place and the metabolic syndrome.

Dr Peter Zalewski continued his studies on the role of zinc in regulation of apoptosis in the respiratory system and in asthma, funded by an NHMRC project grant with Professor Richard Ruffin and Dr Chiara Murgia (a visiting research fellow from the Institute for Food and Nutrition in Rome. Contributing to this work are Research Officer Rhys Hamon, looking at the effects of intracellular Zn on expression of a major inhibitor of apoptosis XIAP, and second year PhD student Eugene Roscioli whose thesis concerns the role of XIAP in airway biology and asthma. The grant focuses on the role of Zn ions in regulation of the family of Zn-rich Inhibitor of Apoptosis Proteins (IAPs). A number of new techniques have been established in the laboratory, including Western blotting and mammalian cell gene expression techniques to enable the experiments to be performed. Dr Zalewski is Chief Investigator A (CIA) on a new NHMRC project grant to commence in 2010. This is a collaborative project looking at the role of zinc in phagocytosis with A/Prof Sandy Hodge and A/Prof Hubertus Jersmann (Hanson Institute and Discipline of Medicine, RAH). PhD student Lata Jayaram has recently submitted her thesis and a paper on the zinc-related aspects of this study. Dr Zalewski is a co-supervisor of another PhD student Razinah Sharif who is working on aspects relating to measurement of zinc levels and deficiency in human buccal cells, in collaboration with scientists at CSIRO, WCH and the Waite Research Institute. Dr Zalewski is also a member of CIDR (Centre for Inflammatory Diseases Research), a cross-discipline collaboration between scientists and clinicians at TQEH and The Basil Hetzel Institute, focusing on chronic inflammation and especially the role of the inflammasome. Dr Zalewski chaired a symposium on zinc and apoptosis/inflammation at the International Society for Zinc Biology in Jerusalem in Nov 2009.

Dr Carol Lang, NHMRC Peter Doherty Research Fellow, conducts research into the role of zinc and airway inflammation in chronic respiratory diseases such as asthma and chronic obstructive pulmonary disease. Dr Lang is also a Chief Investigator for the Centre of Inflammatory

Disease Research Program supported by The Queen Elizabeth Hospital Research Foundation. This Program grant aims to better understand the molecular and cellular mechanisms of inflammation underlying chronic inflammatory diseases; to develop pre-clinical models for investigation of inflammatory pathways and to identify novel therapeutics for treating chronic inflammation. Drs Lang and Zalewski are also working with A/Prof Toby Coates, Transplantation Unit and Dr Chiara Murgia, INRAN, Italy, to investigate proteins that transport zinc in pancreatic islets and airway cells.

Professor David Wilson is an epidemiologist employed by the Department of Medicine to contribute a major population focus to health and health outcomes. This includes the management of population studies and applied research staff. He was the founder of several population surveillance systems including the South Australian Health Omnibus Survey (SAHOS), an annual population household survey, which provides population health data for major government and non-government health organisations and underpins a number of population health research studies. He is a co-founder of the Health Observatory and the North West Adelaide Health Cohort Study (NWAHS). The Health Observatory is a specialist research unit established to study the biomedical and anthropological aspects of health and disease at the population level and the ways these can be modified to promote healthy ageing. The North West Adelaide Health Cohort Study (NWAHS), a population study of chronic disease now in its tenth year of follow up, has contributed substantially to chronic disease research. Professor Wilson is a recognised international expert on population surveillance and a member of the World Association on Risk factor Surveillance (WARFS). He has contributed substantially to the thinking on population research and its application to new areas such as infectious diseases and health literacy. He is a strong advocate of the need for multi-disciplinary research of health problems for the development of sustainable health solutions and improved population health outcomes.

Prof John Horowitz, A/Prof Beltrame and A/Prof Zeitz have their research interests detailed in the Cardiology section of this report.

A/Prof Simon Koblar has his research interests detailed in the Neurology section of this report.



Peter Doherty Research Fellow

CJ Lang BSc(Hons) PhD

Postdoctoral Fellow

C Murgia PhD (Visiting)

Awards

R Visvanathan. Lundbeck Fellowship awarded by Australia and New Zealand Society for Geriatric Medicine (travel and accommodation costs).

Grants

ARC. (Project grant #LP 0990065) Australian baby boomer generation, obesity and work -patterns, causes and implications. (\$489,764 2009) 2009-2011, Hugo G, Wittert G, Adams RJ, Cobiach L, Daniel N, Findley CC, Taylor AW, Wilson DH, Winefield HR, Woolacott AL, Ruffin RE.

NHMRC. (Project grant #519206) Airway epithelial IAPs and their interaction with Zn ions. (\$88,500 2009) 2008-2010, Zalewski PD, Ruffin RE, Murgia C.

NHMRC. (Australian Biomedical (Peter Doherty) Research Fellowship) The role of zinc in the respiratory system and in chronic obstructive pulmonary disease. (\$67,500 2009) 2006-2010, Lang CJ.

TQEH Research Foundation Strategic Initiatives Funding. (Program grant) The Health Observatory. (\$250,000 2009) 2009-2013, Adams RJ, Wilson D, Hill C, Visvanathan R, Wittert G, Ruffin R.

TQEH Research Foundation. (Small grant) Is the X-linked inhibitor of apoptosis a susceptibility gene for asthma? (\$5,000 2009) Zalewski P, Roscioli E, Lester S.

TQEH Research Foundation/Discipline of Medicine. (Postgraduate Scholarship) (\$17,022 2009) Roscioli E.

TQEH Research Foundation Strategic Initiatives Funding. (Program grant) Inflammatory mechanisms and therapies in chronic diseaseasthma, COPD, stroke, cerebrovascular disease, rheumatology diseases and chronic

rhinosinusitis (\$180,000 2009) 2009-2011, Wormald PJ, Koblar S, Rischmueller M, Lester S, <u>Lang C</u>, Tan LW, Zalewski P.

New NHMRC grants awarded for 2010

NHMRC. (Project grant # 627178) The effects of testosterone and a nutritional supplement on hospital admissions in under-nourished, older people. [TQEH Led multicentre RCT] (\$1,018,438 2010-2012) Chapman I, Visvanathan R, Naganathan V, Hunter P, Karnon J, Horowitz M, Lange K, Cameron I.

NHMRC. (Project grant #627189) Gastric, small intestinal and cardiovascular mechanisms of postprandial hypotension. (\$676,500 2010 -2012) Jones KL, Gentilcore D, Visvanathan R, Chapman I, Rayner C, Horowitz M.

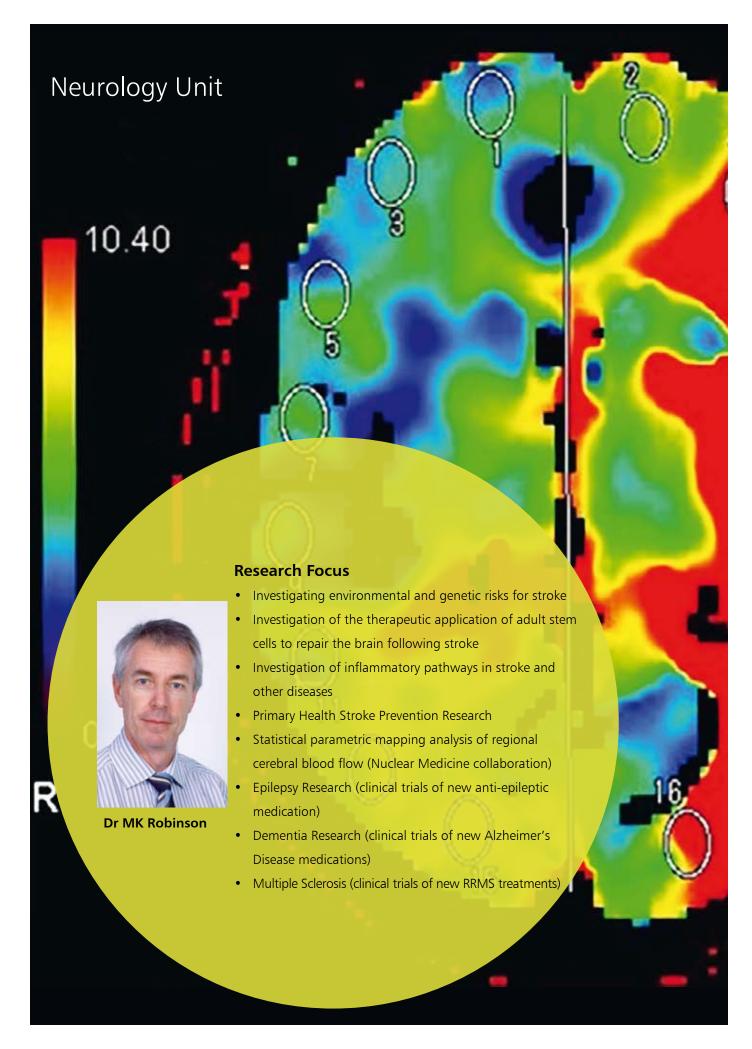
NHMRC. (Project grant #627227) Effect of sex steroids, inflammation, environmental and biopsychosocial factors on cardiometabolic disease risk in men. (\$1,763,013 2010-2012) Wittert G, Wilson D, Travison T, Adams R, Taylor A, McKinley J, Jenkins A, Milne, R, Hugo G, Atlantis E.

NHMRC. (Project grant # 627223) Zalewski P, Hodge S, Jersmann H. Alveolar macrophage zinc and zinc transporters and their role in phagocytosis. (\$278,750 2010-2012).









Overview

The Neurology Department has two main research arms:

Stroke related research which involves both genetic investigations into risk for stroke, stem cell therapy to repair the brain following stroke, inflammatory pathways involved in stroke, and also Primary Health Stroke Prevention Research Clinical trials sponsored to investigate the benefit to our patient populations of new therapeutics in dementia, epilepsy and multiple sclerosis.

Stroke Research Programme (SRP)

The SRP, directed by A/Prof Simon Koblar and co-director Dr Anne Hamilton-Bruce, forms a research collaborative between the School of Medicine & School of Molecular Biomedical Science, University of Adelaide and Department of Neurology, The Basil Hetzel Institute for Medical Research, The Queen Elizabeth Hospital (TQEH). At the beginning of 2009, the TQEH component of SRP moved to the first floor of the new Basil Hetzel Research Institute facility, TQEH.

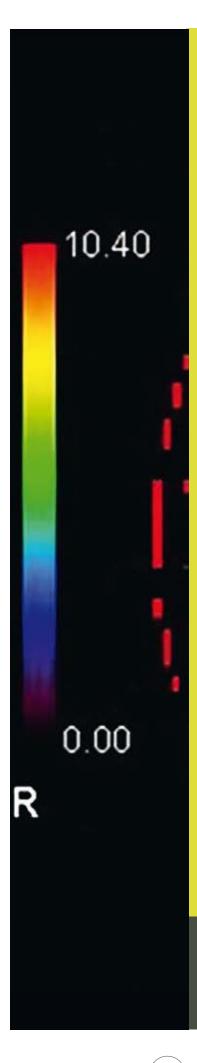
The ongoing study of endothelial function in cerebral small vessel disease (CSVD) with PhD student Ms Ada Lam has, with recruitment and data analysis now complete, progressed well and been finalised. A total of one hundred and thirty two participants were assessed during the study period. Collaborators include Dr E Win Khoo and Dr Sandy Patel (MRI and CSVD), and Ms Skye McLennan and A/Prof Jane Mathias (Cognition and CSVD) from the School of Psychology at the University of Adelaide. Further laboratory collaboration includes that with Ms Rosanna Tavella, Ms Natalie Cutri and A/Prof John Beltrame (SNPs and cardiology). The SRP also collaborated with Dr Celia Chen from the Department of Ophthalmology, Flinders Medical Centre in a study to determine if measurement of retinal nerve fibre layer (RNFL) thickness with optical coherence topography is an effective non-invasive marker of brain volume changes in patients with clinical or sub-clinical leukoaraiosis. This paper is currently under review for publication. With respect to the IP from our earlier research, on which Ms Lam's work builds, Atherogen's 'Mutations Associated with Stroke' patents have been issued in the United States of America and Australia.

SRP is participating in the Australian Stroke Genetics Collaboration (ASGC), a new multistate, multi-centre Australian study into the genetic causes of stroke. The ASGC Study will run over several years to gain a better understanding of the genes involved in stroke and sample numbers will be increased by further patient collections, thereby increasing the power of the study. Since commencing his PhD in April 2009, Mr Michael Djukic has designed a proteomic method for biomarker discovery in patients diagnosed with transient ischaemic attack. Clinical criteria have been developed for candidate patient selection, and blood samples from patients presenting to the Community-Based rapid Access TIA (COMBAT) clinic have been collected prospectively.

Ms Wai Khay Leong, an international PhD scholar from Malaysia who obtained a University of Adelaide International PhD Scholarship, being ranked seventeenth in the University for 2009, has joined the SRP as a PhD candidate. Her major PhD project is to investigate the functional use and underlying mechanisms of using Dental Pulp Stem Cells (DPSC) in a rat stroke model. This year she has worked on the completion of a pilot study and is currently writing up the results from this study.

At the Basil Hetzel Institute (BHI), SRP team members also collaborate within the Centre for Inflammatory Diseases Research (CIDR). Four teams (ENT, Neurology, Respiratory and Rheumatology) in the BHI joined to form CIDR in 2008 and are supported via a three year TQEH Research Foundation Program grant. CIDR collaborators have expertise in many of the main chronic diseases, e.g., asthma and emphysema, sinusitis, arthritis and stroke. Common inflammatory pathways will be investigated and then targeted by new types of therapies such as cell therapies, zinc and fish oil.

Dr Elaine Leung's PhD project aims to define the characteristics of Trans Ischaemic Attack (TIA) assessment and management that currently exist in a prospective study and to determine if a community-based rapid access TIA clinic improves patient stroke outcome and assess its cost-effectiveness. The project also aims to characterise the role and impact of General Practitioners with a Special Interest (GPwSI) in TIA care and stroke prevention, as well as test an educational module on TIA assessment and



"A \$20,000 donation, pledged last year by a grateful former stroke patient, has been used this year to support SRP research. SRP team members also participated in National Stroke Week activities to raise public awareness of stroke symptoms..."

management for general practice in improving confidence and knowledge in TIA care.

Mr Victor Krawczyk's Honours research project aimed to understand whether a workgroup of medical scientific researchers was a community of practice and to learn about members' understandings of language, medicine and the body in their work practices. This exploratory study took a workgroup of professionals as the case to research for its 'intrinsic' worth using a case study qualitative approach. Analysis showed that the workgroup had elements of a community of practice and that particular understandings of language, medicine and the body informed their work practices. The findings are transferable as the case has sufficient context dependent similarities with other research workgroups. These outcomes may enhance the implementation of translational research through shared understandings of medicine and the body. This can assist in opening a new field of investigation in organisational studies by extending community of practice theory to under-researched professional configurations in the biomedical sciences.

Dr Anne Hamilton-Bruce continues a collaboration with Ms Rosie King, Dr John R Moss and Dr Afzal Mahmood, Department of Public Health at the University of Adelaide, investigating the impact that a hospital admission can have on the continuing ability of Home and Community Care (HACC) clients (older people and people with disability) to remain living in their home.

Team members have continued to present at community meetings to raise awareness about our research as well as funding needs, to support research. Once again, the SRP was a recipient of donations throughout the year. A \$20,000 donation, pledged last year by a grateful former stroke patient, has been used this year to support SRP research. SRP team members also participated in National Stroke Week activities to raise public awareness of stroke symptoms, and promoted a public lecture given by A/Prof Koblar in the lecture theatre of the new Basil Hetzel Research Institute building. We also received \$100,000 from the Catholic Church and \$10,000 from Stroke SA for Stem Cell Therapy research in 2009. In December we were awarded \$75,000 by the Centre for Stem Cell Research, Robinson Institute for further stem cell therapy studies in 2010.

The Search Study

The SEARCH study is an NHMRC funded population study of stroke with a budget of \$700,000 over three years. The study is based at TQEH and is a prospective population based study of stroke incidence according to established 'ideal' criteria. Population stroke incidence studies are the only reliable means of identifying the incidence of stroke which varies widely in different regions. There has never been a population based stroke study in South Australia. The SEARCH study has an urban arm, covering 140,000 residents around North West Adelaide, and rural arms in a variety of locations in South Australia. The project is a collaboration between TQEH, the School of Population Health, and the School of Rural Health at The University of Adelaide. Reliable data on incidence, type and care requirements for stroke is vital in planning for adequate stroke health care in the immediate future.

Thrombolysis Audit

A state based population thrombolysis audit is being performed as a separate project within the stroke unit. 164 cases of stroke where thrombolysis has been administered have been identified. Timing, complications and outcome will be reported to evaluate the safety and efficacy of thrombolysis in South Australia. This audit will be used as a bench mark and repeated after the implementation of the SA Stroke Plan.

Clinical Trials Epilepsy

Seven trials of new anti-epileptic drugs were undertaken throughout this year, one of which is still actively recruiting. These trials will allow access to new anti-epileptic drugs that may not become available to the general public until Pharmaceutical Benefits Scheme (PBS) listing and allows development of valuable clinical experience in the utilisation of these drugs.

Dementia

The Memory Clinic and Clinical Cognitive Research Units participate in many International studies. Dr Karyn Boundy is the Chairperson of the Australasian Consortium of Centres for Clinical Cognitive Research (AC4R) to continue facilitation of clinical trials in memory conditions in Australasia. She has also been selected as the South Australian and AC4R representative for Neurosciences Trials Australia – a clinical trials platform with "nodes" in each neurological subspecialty area to facilitate both investigator driven and to also to attract pharmaceutical company early stage phase I – III research to Australia. Dr Boundy has spoken at local General Practitioner (GP) division, national and international meetings about aspects of dementia management and diagnosis of less common dementias e.g., frontal lobe and tauopathies. She has participated in an analysis of antipsychotics on behavioural and psychological symptoms associated with dementia, which subsequently aided the PBS reimbursement of Risperidone for BPSD. A satellite Neurology/Memory Clinic has been set up in Port Lincoln via Rural Health SA.

The study with the Rheumatology Unit on neuropsychological, cognitive, behavioural and imaging with MRI and SPECT in Sjogren's Syndrome is submitted for review for publication.

The Prospective Research in Memory Clinics (PRIME) database continues to study all types of dementia patients are being assessed every twelve months over a three year period. This database allows comparison with centres interstate and international and to provide epidemiological data on our patient group.

Alzheimer Symptomatic Trials

Eight trials have been commenced, completed or are in extension phase. E2020-G00-328 (Aricept 23mg SR) and AVA102675 (Rosiglitazone) were completed. Further trials of Aricept 23mg SR are anticipated, while lack of efficacy for Rosiglitazone in Alzheimer's disease saw this study ceased.

A 24-48 week GSK study is continuing to investigate SB-742457 added to existing donepezil (Aricept) treatment in volunteers with mild to moderate Alzheimer's disease. SB-742457 is an oral selective 5HT6 receptor antagonist.

Lundbeck are sponsoring a 30 week, multicenter, evaluation of Lu AE58054, a selective serotonin receptor 6 (5-HT6 receptor) antagonist. in patients with moderate Alzheimer's disease.

Roche are sponsoring a 30 week add on study of RO5313534, to Aricept 5mg or 10mg for mild to moderate Alzheimer's Disease. RO5313534 is an agonist of the alpha 7 nicotinic acetylcholine receptor; evidence indicates that activation of Nicotinic alpha-7 receptor is critical for learning and memory.

CL2-38093-005 (S 38093) is a Servier Phase IIa study for mild to moderate Alzheimer's disease. S 38093 is an H3 histaminergic receptor antagonist, and is predicted to have cognitive enhancing and arousal properties in humans. The cognitive profile of S 38093 suggests this compound could treat episodic, spatial and working memory deficits found in Alzheimer's disease.

Disease Modifying Trials in Alzheimer's Disease

3133K1-3000/1-WW are twin protocols using a humanised anti amyloid-beta peptide monoclonal antibody (AAB001). These are eighteen month studies with multiple doses of intravenously administer bapineuzumab in subjects with Mild to moderate Alzheimer's Disease, who are Apolipoprotein E £4 CARRIERS or NON CARRIERS compared with placebo subjects. Subjects will be stratified according to Mini-Mental State Examination score 16-21/30 - 21-26/30 and concomitant cholinesterase inhibitor and/or Memantine use.

An eighteen month Phase 2 Pfizer study of Multiple Doses of PF 04360365 in Patients with Mild to Moderate Alzheimer's Disease is progressing. PF-04360365 is a humanized monoclonal antibody directed against an epitope encompassing the C terminal amino acids of the (Amyloid Beta) A β 1-40 peptide derived from the Amyloid Precursor Protein (APP). The compound is postulated to decrease A β in the brain, whether present as soluble monomers or oligomers or in plaques.

The Medivation/Pfizer sponsored DIM18 (Dimebon) Phase III study for mild to moderate Alzheimer's Disease is vigorously recruiting. Dimebon is postulated to have disease modifying mitochondrial stabilisation properties and binds with high potency to select serotonin receptors (5-HT6 and 5-HT7), alpha-1 adrenergic receptors (subtypes 1A, 1B, and 1D) and alpha-2 adrenergic receptors (subtype 2B). Dimebon

"The cognitive profile of S 38093 suggests this compound could treat episodic, spatial and working memory deficits found in Alzheimer's disease"

"Firategrast has a similar selectivity and pharmacodynamic activity to natalizumab, a monoclonal antibody shown to be effective for treatment of multiple sclerosis. This oral product has a good safety profile so far. The study will conclude in 2010."

additionally binds to histamine H1 and H2 receptors and is a dual cholinesterase and NMDA-receptor antagonist.

Multiple Sclerosis

Many new exciting disease modifying products are being tested. Clinical trials in the area of Relapsing Remitting Multiple Sclerosis (RRMS) continued with an extension to the CFTY720D2301 protocol, an oral compound (FTY720) that reversibly traps a proportion of lymphocytes in the lymph nodes thereby reducing neuro-inflammation in RRMS. The core study finished earlier this year and the results are pending.

Another diverse treatment is Firategrast1 (GSK-SB-683699) (also oral) an antagonist of α 4 β 1/ α 4 β 7 integrin mediated cell adhesion. These integrins have been shown to play an important role in the initiation and perpetuation of localised inflammation. Firategrast has a similar selectivity and pharmacodynamic activity to natalizumab, a monoclonal antibody shown to be effective for treatment of multiple sclerosis. This oral product has a good safety profile so far. The study will conclude in 2010.

The CAMMS323 and CAMMS324 protocols trial Alemtuzumab, a monoclonal antibody which is approved for the treatment of B-cell chronic lymphocytic leukaemia in many countries under the names CAMPATH or MabCAMPATH. In a phase II study conducted in patients with RRMS, Alemtuzumab produced a significant reduction in sustained accumulation of disability as well as reductions in relapse rates and lesion formation. CAMMS323 is for treatment-naïve patients and CAMMS324 is for patients who have been on MS treatment.

In the ATAMS Protocol 28063, Atacicept is used for RRMS in a double-blind, placebo-controlled trial, with Rebif as a rescue treatment. Atacicept is a recombinant fusion protein which acts as an antagonist to B-lymphocyte stimulator (BLyS) and A Proliferation-inducing ligand (APRIL) which are important regulators of B cells. The treatment has been terminated due to poor efficacy and patients are on an extended follow-up period.

Protocol EFC105031 trials an oral compound (Teriflunomide) which inhibits

T-cell proliferation for the next 2 years. The Phase II study has shown significant reduction of disease activity on MRI scans and a trend towards lower annualised relapse rates and disability. The current Phase III study will compare 2 different doses of Teriflunomide against placebo over two years.

An observational study on disability, quality of life and cognition whilst on currently approved treatment has been submitted to Ethics and approval is pending.

Staff

Director of Neurology

MK Robinson MBBS FRACP

Senior Visiting Neurologist

GH Purdie MBBS FRACP KL Boundy MBBS FRACP H Waddy BMBS FRACP

Clinical Academic Neurologist / Director of Stroke Research Programme

SA Koblar BMBS FRACP PhD

Senior Consultant Neurologist / Director of Stroke Unit

J Jannes BMBS FRACP PhD

Chief Clinical Neuropsychologist

AC Kneebone BA Dip App Psych MA PhD FAPS

Consultant Neurologist

C Short BSc MBBS FRACP

National Health and Medical Research Council (NHMRC) Stroke Fellow

J Leyden BMBS

Principal Medical Scientist / Co-Director of Stroke Research Programme

MA Hamilton-Bruce BSc MSc MBA PhD AFCHSE CBiol MSB CSci FIBMS

Medical Scientist

MB Donk BHSc

Chief EEG Technologist

J Pruszkowski Diploma in Medical Analysis

Neurology Secretary

JA D'ordoy Cert IV Bus Admin

Administrative Assistant

K Greet

Administrative Assistant (part-time)

R Richards

Memory Unit Secretary

G Searle

Clinical Nurse Manager

KJ Webb RN BN

Comprehensive Epilepsy Program CPC

S Horn CPC ICU Cert

Stroke Nurse

L Dodd RN BN

Transient Ischaemic Attack (TIA) Nurse

P Toner RN BN

Stroke Research Nurse

S Castle RN BN

Clinical Research Trials

JA Deimel RN BN EL Lam RN PCK Cheung RN P Steventon RN S Casey RN BN F Whaley RN BN

Senior Research Scientist for SRP and CIDR

M Lewis PhD

Senior Medical Scientist for SRP

AG Milton BSc(Hons) Dip Comp Sci

Postgraduate Students

Completed thesis

EA Goble BSc(Hons) MSc, University of Adelaide, School of Medicine,

July 2009. Thesis: Acetylcholine and Post-traumatic

Stress Disorder"

PhD candidates

 $\label{eq:main_model} \mbox{M Djukic BHSc(Hons) GradCertBus(Acc)} \ \ \mbox{"Proteomic and genomic investigations in transient}$

ischaemic attack"

A Lam BPharm(Hons) "Endothelial Function in Cerebral Small Vessel Disease (SVD)"

WK Leong BSc(Biotech)(Hons) "Mechanisms of neuroregeneration post-ischaemic stroke –

stem cell and molecular studies"

E Leung MBBS BSc(Med) DCH FRACGP "That a community-based approach to Transient Ischaemic

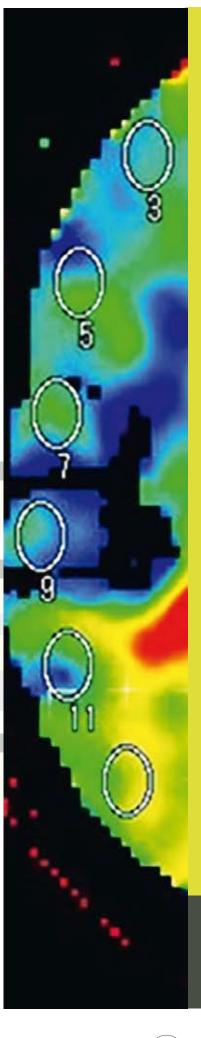
Attack (TIA) care is effective"

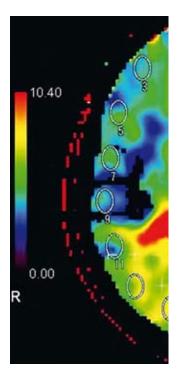
Honours candidate

V Krawczyk BSocSci "A case study of medical scientific searchers: Exploring

communities of practice and understandings of language,

medicine and the body"





Grants

Alzheimer's Australia. Scholarship to attend the Alzheimer's Australian National Conference June 2009 (\$500 2009) Boundy KL, Deimel J.

Australian Neurology. (Research grant) (\$20,000 2009) Koblar SA, Hamilton-Bruce MA, Lewis M.

Australian Neurology. (Research grant) A rodent model of ischaemic stroke (\$6,000 2009) Koblar SA, Lewis M, Hamilton-Bruce A, Milton A, Leong WK.

Catholic Archdiocese of Sydney.(Adult Stem Cell grant) Human Dental Pulp Stem Cells for Stem Cell Therapy in Stroke (\$100,000 2008/9) Koblar SA, Gronthos S, Arthur A.

CMV. Equipment Grant. (\$14,500 2009) Milton AG, Hamilton-Bruce MA, Jannes J, Koblar SA.

National Stroke Foundation. (Research grant) (\$20,000 2009) Leung E.

NHMRC. (Project grant) The Role of Eph/ephrin Interactions in Mediating Mesenchymal Stem Cell Commitment, Migration and Bone Fracture Repair (\$185,500 2009) 2009-2011, Gronthos S, Koblar SA, Matsuo K.

Janssen Cilag. Prime Database Survey (\$80,000 2007 - ongoing) Boundy KL.

Stroke Genetics. (Collaborative Project grant) Genome-wide association study (\$1,100,000 2009) Levi C, Sturm J, Attia J, Scott R, Koblar SA, Lincz L.

Stroke SA. Stem Cell Therapy in Stroke (\$10,000 2009) Koblar SA.

TQEH Research Foundation Honours Research Scholarship (\$4,000 2009) Krawczyk V.

TQEH Research Foundation. Postgraduate Top-Up Scholarship (\$4,166 2009) Djukic M.

TQEH Research Foundation Strategic Initiatives Funding. (Program grant) Inflammatory Mechanisms and Therapies in Chronic Disease, Asthma, COPD, Stroke, Cerebrovascular Disease, Rheumatology Diseases and Chronic Rhinosinusitis. (\$180,000 2009)

2009-2011, Wormald PJ, <u>Koblar SA</u>, Lang C, Lester S, Rischmueller M, Tan LW, Zalewski P.

University of Adelaide. Australian Postgraduate Award (\$17,024 2009) Djukic M.

University of Adelaide. Australian Postgraduate Award (\$20,429 2009) Leung E.

University of Adelaide. Centre for Stem Cell Research Robinson Institute. Efficacy of intravenous versus intracerebral injection of stem cells for brain repair (\$75,000 2009) Koblar SA, Gronthos S.

University of Adelaide. Adelaide Scholarships International (ASI) (\$20,429 2009) Leong WK.

University of Adelaide. Faculty of Health Sciences. Postgraduate Research Scholarship (\$20,429 2009) Lam AK.

University of South Australia. High Achiever Research Vacation Scholarship 2010 awarded 2009. (\$1,800 2009) Krawczyk V.

Award

Leong WK. University of Adelaide School of Molecular and Biomedical Science, 1st Prize -Open Science Category Award (\$200 2009)

Patents

Mutation associated with strokes (TPA):

- Registered in the name of The Queen Elizabeth Hospital Research Foundation and Adelaide Research and Innovation Pty Ltd (ARI). Licensed to Atherogen Biotechnology Pty Ltd.
- Inventors: Jannes J, Koblar SA, Hamilton-Bruce MA.
- PCT/AU2004/000905 and issued patents derived there from including US Patent 7,455,970 and Australian Patent 2003903412. Title: "Mutation associated with strokes. Inventors: Hamilton-Bruce MA; Jannes J, Koblar SA.

Brain Repair Following Stroke - Stem Cell Ikaros Assay: Patent: An assay for determining neuroplasticity effect of stem cells PCT/AU02/01759.

- Applicant: ARI, University of Adelaide and Medvet Science Pty Ltd.
- Inventors: Koblar SA, Gronthos S, Arthur A.
- Australian Provisional Patent Applic. No.2007904700 filed 30/8/07.

NUCLEAR MEDICINE UNIT

Research Focus

- Statistical parametric mapping of regional cerebral blood flow and MRI
- Development of new image processing techniques in brain and lung imaging
- Evaluation of ischaemia and cardiac denervation in heart failure
- Nuclear Medicine therapies in patients with inoperable cancers



Dr Steve Unger

Overview

Our Department's research continues to focus on the major areas of cardiac, oncological and neurological nuclear medicine. Dr Thanh Nguyen is investigating the association between cardiac sympathetic denervation (as assessed by myocardial I-123 MIBG imaging) and myocardial ischaemia (assessed with stress Tc-99m Sestamibi imaging) and outcomes, particularly ventricular arrhythmias, in patients with heart failure. We are also involved in cardiac "hot spot' imaging of patients with an acute sympathetically medicated cardiac syndrome known as Tako-tsubo cardiomyopathy.

We have also participated in two multicentre collaborative projects with the oncology unit involving therapeutic nuclear medicine. The first study involves the use of SIR-spheres (microspheres labelled with Y-90) administered via the hepatic artery in patients with non-resectable liver metastases from primary colorectal carcinoma. The second study is a large multi-national multicentre Phase III trial of targeted radiation therapy using Alpharedin (radium-223) in patients with metastatic prostate cancer and diffuse bone pain.

During 2009, Dr Gabrielle Cehic has successfully set up a state-wide collaborative referral and therapy service for patients with gastro-enterological/pancreatic neuro-endocrine tumours (GEP-NET), chairing regular multi-disciplinary meetings on a bi-monthly basis. We hope to commence clinical trials of novel radio-labelled peptides in these patients with poorly controlled symptoms in the near future.

Neuroimaging research and development in 2009 built on the image processing expertise of the department. It involved two clinical brain research projects and the in-house development and application of new imaging software for specialised clinical diagnosis. This was performed by Dr Barnden and a grant-funded scientist.

The powerful statistical parametric mapping (SPM) package was applied to subjects selected retrospectively from the department's archive of dementia brain scans. Together with new pre-processing software developed at TQEH and in collaboration with Dr David Abbott of the Brain Research Institute (BRI) in Melbourne, this revealed perfusion deficits in the anterior cingulate gyrus in Mild Cognitive Impairment.

Interim funding was obtained to allow our grant-funded scientist to continue analysis of brain MRI images in Chronic Fatigue Syndrome (CFS) in a project with Dr Richard Burnet of RAH as principal investigator. Our application of SPM for quantitative analysis of T1 and T2-weighted MRI is a world first. We found involvement of brainstem and prefrontal white matter structures not yet reported in the CFS literature. We presented preliminary results to an international CFS conference in March.

New image processing programs have been developed by Dr Barnden for clinical evaluation. They offer improved detection of pulmonary emboli and cerebral blood flow deficits. Dr Vallat has utilised the new program to evaluate SPECT (3-D) lung images in comparison to standard planar images in the diagnosis of pulmonary embolism in a prospective clinical study.

The masters research project "Acetycholine and Post Traumatic Stress Disorder" of Elizabeth Goble jointly supervised by Dr Barnden was completed and accepted.

"We found involvement of brainstem and prefrontal white matter structures not yet reported in the CFS literature. We presented preliminary results to an international CFS conference in March."

Staff Director

S Unger MBBS FRACP PhD

Visiting Medical Specialists

M Kitchener MBBS FRACP

R Casse MBBS FRACE

A Warner MBBS FRACP PhD

G Cehic MBBS FRACP

K Tan MBBS FRACP

M Nottage MBBS FRACR

Medical Scientists

L Barnden BSc(Hons)PhD

D Badger BSc(Hons) PhD

B Crouch BSc(Hons)

A Menone BSc(Hons)PhD

Higher Degree Students

PhD candidate

TH Nguyen "Cardiac Denervation in Heart Failure"

MSc in Medial Physics

D Badger

B Crouch

Registrar

W Vallat MBBS

Technologists

P Ong

G Pandos

T Smith

P Sotiropoulos

N Farnham

T Piscitelli

K Eberhard

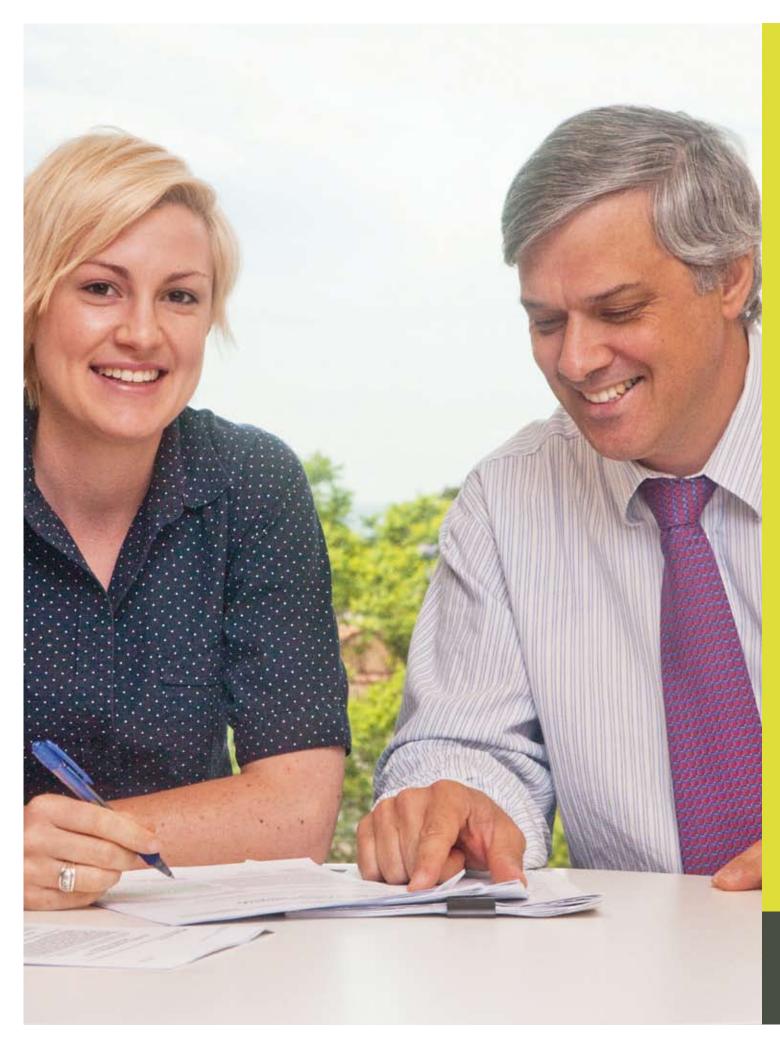
L Waran

R Edwards D Maglica

Grants

The Mason Foundation. Investigation of the progression of brain abnormalities in Chronic Fatigue Syndrome (CFS) using MRI in a longitudinal study of post-viral fatigue subjects (\$100,000 2009) 2009-10, Barnden L, Kwiatek R.

John T Reid Charitable Trusts. Investigation of the progression of brain abnormalities in CFS using MRI in a longitudinal study of post-viral fatigue subjects. (\$51,000 2009) 2009-10, Barnden L, Kwiatek R.





NURSING RESEARCH

Research Focus

- Diabetes
- Cardiac Assessment
- Cardiac Care
- · Advanced Care Planning
- Wound Care
- Education

"The application of evidence/research based protocols and pathways continue to be implemented..."

Overview

The past year has provided many challenges for The Queen Elizabeth Hospital/Saint Margaret's Rehabilitation Hospital and Nursing however, the Nursing Service continued its endeavours to improve health outcomes for its patients through the continuum of inpatient, day patient, outpatient and community services. The continuing development of Clinical Practice Consultants toward Nurse Practitioner authorisation promotes the value Nurses bring to the care continuum and transitioning patients back to community services and aiding patients to self manage their chronic disease/ illness. The application of evidence/research based protocols and pathways continue to be implemented enabling outcomes to be evaluated and further research undertaken. Nurses participated in clinical practice improvement studies for continence management reduction in medication omissions, security outcomes for patients in ED and the establishment of an evidence based Warfarin protocol for the hospital.

Further collaboration is underway with the University of Adelaide – Nursing Programmes to progress areas of clinical significance for 2010.

Grants

Abbott Diabetes Care Service Development Grant for Diabetes Educators. Education and support for young people and their families affected by type 1diabetes in rural and remote SA (\$3,000 2009) Visentin K, Giles J.

The Northern Communities Health Foundation Inc. Advance Care Planning in the Community (\$10,000 2009) 2007-2009, Respecting Patient Choices Program TQEH and Adelaide Western General Practice Network.

OTOLARYNGOLOGY, HEAD AND NECK SURGERY, Department of



Professor PJ Wormald

Overview

In 2009 the ENT Department continued to expand its research capabilities and research team. We now have six full time PhD students and a Master's student as well as three full time scientists. This group in combination with the supervising clinical staff has developed a very vibrant critical research mass which generates ideas and is consequently able to stay at the very cutting edge of rhinological research worldwide. This has led to our department being recognized internationally as one of the leading rhinological research institutions in the world. At the recent American Rhinological Society meeting in San Diego our department was awarded the Maurice Cottle Award for the best scientific paper and the Golden Head Mirror Award (an award that is not given each year but only when the board deems suitable individuals fill the criteria) for a significant contribution to Rhinology both in the research and teaching areas.

The Queen Elizabeth Hospital Research Foundation has supported the purchase of a number of new instruments to support research in the Basil Hetzel Institute. The Bioplex MultiArrayer (Biorad, USA), Liquichip (Qiagen, Germany), and ImmunoCAP (Phadia, Sweden) have greatly increased our capacity to perform highly sophisticated analyses of cytokine protein markers of inflammation, bacterial quantitation on ex vivo animal respiratory mucosa and immunoglobulin profiles in patient sera and tissues. The ENT Department has also been a central player in the development of the "Centre for Chronic Inflammation and Disease Research" (CIDR). A successful collaborative research bid involving ENT, Stroke Research Programme, Rheumatology and Respiratory centered on the common theme in each of these areas, namely "inflammation". This successful bid has now seen our research team become

involved with other research teams at the Institute in the investigation of inflammatory mechanisms and in the development of potentially interesting new treatment options. Our involvement in Chronic Inflammatory Diseases Research (CIDR) has seen our expertise utilized by other researchers within the BHL

The Tan & Wormald NHMRC Development Grant using the *S. aureus* biofilm model in sheep commenced in March 2009. Dr Tan, Ms Leonie Baker (Senior Research Assistant) and Ms Sarah Bray (Research Assistant) were involved in testing the inhibitory effect of the novel sugar 3 sialyl lactose (3SL) on biofilm formation. We also conducted in vitro tests of the efficacy of 3SL on other clinically relevant bacteria, *Haemophilus influenzae and Pseduomonas aeruginosa*.

Dr Andrew Foreman, Surgeon Scientist PhD candidate, is investigating the role of biofilms in Chronic Rhinosinusitis. So far he has developed a Fluorescence in situ Hybridisation (FISH) protocol for the detection and characterisation of bacterial and fungal biofilms in CRS and compared this protocol to our gold-standard BacLight protocol to identify situations in which each would be best used, based on the research aims of the project. Over the last year he has successfully identified an interaction between S. aureus biofilms and the host. This has been in collaboration with the University of Ghent, Belgium, whom Andrew visited earlier in the year. This is the first study to definitively link biofilms to the pathogenesis of CRS and therefore validates our previous work as well as providing a basis from which to move forward from with more specific biofilm treatment modalities. Andrew's research also collaborates with the Centre for Genomic Sciences (CGS) in Pittsburgh, PA, USA. This aspect will attempt to perform whole genome sequencing of *S. aureus* strains to identify

'This group in combination with the supervising clinical staff has developed a very vibrant critical research mass which generates ideas and is consequently able to stay at the very cutting edge of rhinological research worldwide...

...This has led to our department being recognized internationally as one of the leading rhinological research institutions in the world."

TQEHresearch Research Report 2009

"...the next important step is to evaluate the role of fungus in non-sensitized as well as sensitized subjects and to understand the pathogenesis of fungal sinus infections as well as the potential symbiosis between fungus and bacterial infections particularly S. aureus."

differences between biofilm-forming and non biofilm-forming strains and how these might be relevant to CRS pathogenesis. Andrew also visited the CGS whilst in the USA where he presented at the American Rhinologic Society Annual Scientific Meeting.

Dr Rowan Valentine, Surgeon Scientist PhD candidate, is investigating the effects of chitosan on the nose and sinuses after surgery. This year he has completed a patient trial comparing the effects of this gel on haemostasis and adhesion formation, showing the gels significant anti-adhesion and haemostatic properties. In addition to this, Rowan has recently developed an animal model of carotid artery injury during endoscopic sinus surgery and is currently further analysing the CD gel haemostatic properties under this challenging environment. Next year we will be continuing to investigate CD Gel by investigating the haemostatic mechanisms by which CD Gel achieves haemostasis, and further delineate the effects of the gel on sinus ostial stenosis following sinus surgery.

Dr Sam Boase, PhD student, is developing an animal model of fungal sinusitis. The department has successfully developed a bacterial model, the next important step is to evaluate the role of fungus in non-sensitized as well as sensitized subjects and to understand the pathogenesis of fungal sinus infections as well as the potential symbiosis between fungus and bacterial infections particularly *S. aureus*.

Dr Josh Jervis-Bardy, PhD candidate, has been investigating the role of *S. aureus* in the recalcitrant chronic sinusitis patients as well as investigating novel and new treatment of patients with recalcitrant *S. aureus* infections.

Dr Deepti Singhal, PhD candidate, has developed the first pictures of fungal biofilms both in a static as well as in the flow chamber and been able to characterize the features of fungal biofilms for the first time in the world.

Ms Jasmine Micklen is doing a PhD, evaluating the validity and acceptability of currently accepted quality of life questionnaires on the outcomes of aboriginal patients treated for head and neck cancer.

Staff

Professor of Otolaryngology and Head of Department

P-J Wormald MD FCS(SA) FRCS(Ed)

Senior Lecturer

G Rees MBBS FRACS

Staff Specialist

S Floreani MBBS FRACS
J Ling MBBS FRACS
S Rajapaksa MBBS FRACS
H Pant MBBS FRACS

Rhinology Fellow

M Tewfik MD

ENT Registrar

К На мвв мѕ

Garnett Passe & Rodney Williams Memorial Foundation Research Scientist, University of Adelaide

LW Tan BSc(Hons) PhD

ENT Research Assistants

L Baker BSc(Hons)
S Bray BSc(Hons)

Clinical Nurse Operating Theatres

T Nicholls RN BN MN

Secretary

L Martin

Postgraduate Doctoral Students

Completed thesis

T Le MS, University of Adelaide, Discipline of Surgery, School of Medicine.

Thesis: "The effect of topical agents on biofilm formation in the in vivo

sheep model of chronic rhinosinusitis"

Continuing Postgraduate students		
R Valentine MBBS	"Comparison of Tranexamic Acid and Chito-dex Gel in Haemostasis and Wound Healing following Endoscopic Sinus Surgery"	
A Foreman MBBS	"The role of bacterial bioflims in chronic rhinosinusitis"	
S Boase MBBS	"Bacterial biofilm formation in chronic rhinosinusitis: testing novel treatments using a sheep model"	
D Singhal BMBS	"Fungal bacterial Biofilms in chronic rhinosinusitis"	
J Jervis-Bardy мввs	"Novel anti-biofilm therapies in chronic rhinosinusitis"	
J Micklen BBTech(Hons)	"Australian Aboriginal Head and Neck Cancer Patients: Health-Related	



Awards

A Foreman. Australian Society of Otolaryngology Head and Neck Surgery SA Branch Meeting, Adelaide, Ronald Gristwood Medal for Best Registrar Presentation, August 2009.

A Foreman. The Queen Elizabeth Hospital Research Foundation Research Day Adelaide, Best presentation, "Higher Degrees Clinical and Registrars" category, October 2009.

A Foreman. Royal Australasian College of Surgeons Surgical Research Society, 46th ASM, Adelaide, Travel Grant, November 2009.

R Valentine. American Rhinologic Society, San Diego CA, USA. Maurice Cottle Award, Best Scientific Presentation, September 2009.

PJ Wormald. American Rhinologic Society, San Diego CA, USA. Golden Head Mirror Award for Significant Contribution and Teaching in ENT, September 2009.

Grants

Quality of Life in South Australia and the Northern Territory"

BioInnovation SA. (Commercial Development grant) Novel glycotherapies for bacterial biofilm associated diseases (\$62,420 2009) Tan LW, Wormald PJ.

Garnett Passe and Rodney Williams Memorial Foundation. The nasal innate immune response to fungal and staphylococcal challenge: the role of lysozyme (\$90,000 2009) 2008-2010, Carney AS, Harris P, Woods C, Ooi EH, Tan LW, Wormald PJ.

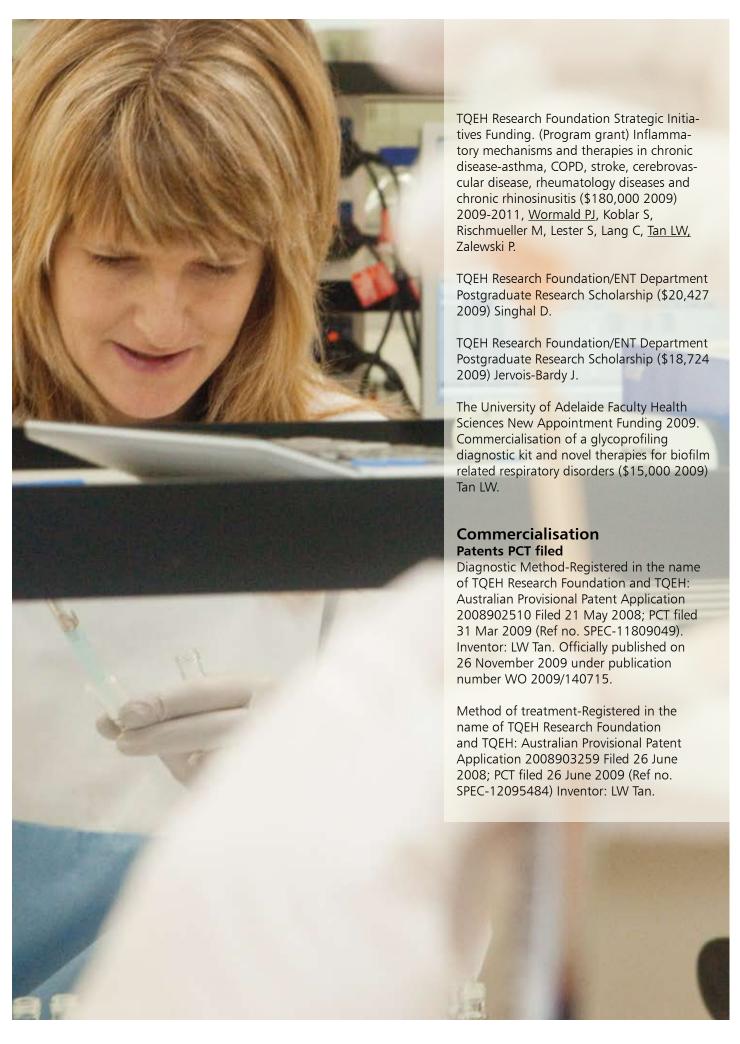
Garnett Passe and Rodney Williams Memorial Foundation. (Research Scientist grant) Are aberrant sugar profiles of the mucin glycoprotein MUC7 responsible for bacterial and fungal biofilm formation in chronic rhinosinusitis (\$120,000 2009) 2008-2011, Tan LW, Wormald PJ.

Garnett Passe and Rodney Williams Memorial Foundation. (Surgeon Scientist grant) (\$75,000 2009) Foreman A.

Garnett Passe and Rodney Williams Memorial Foundation. (Surgeon Scientist grant) (\$75,000 2009) Valentine R.

Premier's Nursing & Midwifery Scholarship 2009/2010. A Study Tour to the United States of America and the United Kingdom to explore the fundamentals in developing the ENT Nurse Practitioner role. (\$12,000 2009) Nicholls T.

TQEHresearch Research Report 2009



PSYCHIATRY, University of Adelaide Discipline of

Research Focus

- The relationship between depression and cardiovascular disease and its management.
- The development of more efficient and effective strategies for the management of mental illness.

Dr Geoff Schrader



Overview

In 2009, patients began to be recruited for a randomised controlled trial of omega 3 fatty acids for depression in patients with ischaemic heart disease. The trial is part of a project funded by the National Heart Foundation and beyondblue which is also investigating possible mechanisms including the role of the serotonin transporter gene and endothelial dysfunction on any impact of omega 3 fatty on depression.

Dr Schrader continued his collaboration with Professor Simon Stewart, Professor of Preventative Cardiology at the Baker Heart Research Institute and Professor David Wilkinson, of the Department of Primary Care at University of Queensland on the NHMRC funded "TakeHeart" project. This project involves a cluster randomized trial conducted in twenty four general practices and is attempting to discover the impact of identifying and treating depression in patients with heart failure and angina completed its recruitment phase this year. Dr Schrader has also continued his collaboration with A/Prof John Beltrame from the Discipline of Medicine and together they supervise four PhD students, Rosanna Tavella, Alexis Wheeler, Rachel Dreyer and Tracy Air whose projects focus on various aspects of the association between cardiac disease and depression. Rosanna Tavella continued her investigation into the impact of depression on quality of life in cardiac patients and continued a project examining the association between the serotonin transporter gene and depression in cardiac patients. Alexis Wheeler continued a project examining mortality rates in cardiac patients with depression and this work is being carried out in association with the Epidemiology Branch of the SA Health. She began recruiting patients for a study to determine the effect of mindfulness

based meditation on heart rate variability

in depressed outpatients at the Centre for the Treatment of Anxiety and Depression. Rachel Dreyer began a project which will examine gender effects in the presentation and management of cardiovascular disease. Tracy Air began a project which will examine the impact of depression on the cost to the community of cardiovascular disease.

Dr Rohan Dhillon, Dr Tarun Bastiampillai and Dr Jorg Strobel and Ms Sue Tiver continued to develop their interest in new approaches to the management of mental illness. In particular they assessed the impact of a novel means of improving communication between mental health professionals. Dr Maura Kenny, clinical lecturer, continued to develop her interest in mindfulness based cognitive psychotherapy at the Centre for the Treatment of Anxiety and Depression.





RENAL UNIT

Research Focus

- Many aspects of the care of patients with renal disease with special emphasis on kidney transplantation at clinical, epidemiological and experimental levels
- A new research initiative began in 2005-6 continues in the field of pancreatic islet transplantation as treatment for Type-1 diabetes mellitus and has progressed to the point where the first islet transplant is imminent
- A three year TQEHRF Program Grant to establish the renal unit as a centre for renal translational research to bring areas of research into the clinical arena for the benefit of renal transplant patients





Overview

2009 has again been an extremely productive year for research in the department. The highlights of the year have been:

- Associate Professor Manchala Mohan Rao was installed as a Member of the Order
 of Australia (AM) in the Queen's Birthday Honours List for his service to medicine,
 particularly renal transplant surgery, as a mentor and educator, and through
 professional development. In addition A/Prof Rao received a 'Lifetime Achievement
 Award' from the Indian Society of Organ Transplantation in recognition of his role for
 pioneering renal transplantation in India;
- Ongoing funding from the Juvenile Diabetes Research Foundation for the Pancreatic Islet Transplant Project;
- Research funding to the department exceeding well over 1 million dollars, for the fourth consecutive year;
- Fifty publications (well over a 100% increase from last year) in peer reviewed international medical journals;
- A record number of both post graduate students and honours' students for the second year in a row;
- Three post graduate students awarded their PhD degree;
- Five Honours Students being awarded Honours in BSc Honours Degree;
- Continuing growth in contract research between commercial companies and the department;
- A new three year NHMRC Project Grant to A/Prof Toby Coates for Renal Dendritic Cell studies;
- TQEHRF Program Grant for Translation Renal Research Centre to Prof Graeme Russ, A/Prof Toby Coates, A/Prof Stephen McDonald, Dr Ravi Krishnan, A/Prof Ray Morris and Dr Betty Sallustio.

The research program at the Department of Nephrology and Transplantation Services at The Queen Elizabeth Hospital has three broad aims which cover firstly the epidemiology of kidney disease, cellular therapies for chronic renal disease/organ transplantation and clinical renal transplantation research. The department had another good year for kidney transplantation, with eighty kidney transplants, which included twenty three with live donors. Increasingly we have been able to perform more difficult transplants, transplanting six recipients with ABO incompatibility and five who required desensitisation to antibodies who otherwise may not have been considered for a transplant.

"Increasingly we have been able to perform more difficult transplants, transplanting six recipients with ABO incompatibility and five who required desensitisation to antibodies who otherwise may not have been considered for a transplant."

TQEHresearch Research Report 2009 61



"The collaborative research project will be examining the role of Adult Stem Cells in a variety of degenerative diseases and opens up a strong link between medical research in the hospital and industry."

Epidemiological Research

The principal focus of Epidemiological Research has continued to be the Australia and New Zealand Dialysis and Transplant (ANZDATA).and ANZ Organ Donor (ANZOD) Registries, conducted within the Department. A/Prof McDonald is the Executive Officer for ANZDATA, and Prof Russ for ANZOD. These are now funded by the National Organ and Tissue Donation and Transplantation Authority; operations of each are overseen by separate steering committees.

For both Registries, the core roles are gathering and utilizing information about the incidence, prevalence and outcomes of dialysis and transplantation across Australia and New Zealand (for the ANZDATA Registry), and the number and characteristics of deceased organ donors (for ANZOD Registry).

As part of this there is an active research role, with a number of papers produced and a wide network of collaborators in renal units throughout Australia. In 2009, over thirty journal publications appeared based on ANZDATA or ANZOD data. In addition, major changes have been undertaken to the content and format of the individual centre reports. These are reports which outline the performance of individual renal units throughout Australia and New Zealand in the areas of transplantation and dialysis, and are produced for every unit on a yearly basis. Finally, there has been extensive collaboration with and use of ANZDATA data by the Australian Institute of Health and Welfare who have produced a series of major reports on chronic kidney disease in Australia.

Dr Andrew Brunskill resigned as Epidemiology Fellow in September, and will return to the US. Highlights of his period as fellow have been the exploration of socioeconomic dimensions of end-stage renal disease. Hannah Dent is on maternity leave from November 2009; the biostatistician position is being filled by Fiona Mensah.

Laboratory Research

The laboratory research conducted by Dr Ravi Krishnan continues to investigate the role of inhibitory molecules in allograft rejection by the use of gene therapy vectors. The inhibitory molecules studied are FoxP3, HLA-G, PD-L1/2. Another aspect of Dr Krishnan's work examines the role of adult Mesenchymal stem cells as cellular therapeutic agents for modifying the alloimmune response to facilitate the acceptance of transplanted organs with minimal immunosuppression. In addition, new investigations using mesenchymal stem cells by Dr Krishnan have recently been funded by the US-based Adult Stem Cell Therapy Company, Angioblast Systems. The collaborative research project will be examining the role of Adult Stem Cells in a variety of degenerative diseases and opens up a strong link between medical research in the hospital and industry. The funding will allow the employment of experienced researchers Mr Dongging Yang and Ms Julie Johnston. The data obtained from the studies will facilitate further funding from Industry and also Category 1 type funding. This year Dr Krishnan has supervised PhD student, Boris Fedorić who was awarded his PhD in October, along with four honours students (Miranda Coleman, Tim Searcy, James Cooney and Chris Hope). Dr Krishnan has pursued extensive collaborations at an international level with the University of Columbia (Prof Silviou Ietescu) and local collaborators with regard to mesenchymal stem cell therapy.

TQEH Research Foundation continues to support the laboratory research effort. In 2009 the Foundation initiated a Program Grant for the Renal Unit to create a centre for renal translational research. The Foundation also continued to support small grants which assisted Dr Michael Collins and Dr Matthew Stephenson with their studies in renal transplantation.

During the year Dr Michael Collins instigated a major study of 'screening for colo-rectal cancer in kidney transplant recipients'. This study is ongoing and the initial data looks very promising in the management of transplant recipients. Michael has also commenced his PhD studies into tolerogenic dendritic cell therapy in renal transplantation under the supervision of A/Prof Toby Coates and Prof Graeme Russ. Within the dendritic cell laboratory Dr Natasha Rogers continued

her studies on tolerogenic liposomes in association with Prof Chris Parish from the Australian National University. Dr Claire Jessup has worked on a novel approach to cellular therapy by researching the characteristics of rat endothelial progenitor cells to enhance the engraftment of pancreatic islets. Dr Matthew Stephenson has joined our research team studying the effects of how ischaemia of the kidney affects its function. Dr Stephenson along with Dr Duncan Cooke investigated dendritic cell markers in urine of kidney transplant recipients to examine patients undergoing acute rejection. Ms Svjetlana Kireta commenced studies into mesangial cells isolated from nephrectomised kidneys to examine their role in transplant glomerulopathy. Dr Shilpa Prasad, Hooi Sian Eng and Boris Fedoric all completed their PhDs and we congratulate them all, along with their supervisors A/Prof Toby Coates, Professor Graeme Russ and Dr Ravi Krishnan.

Dr Shaundeep Sen continues his PhD examining the relationship between risk factors and markers of vascular disease among people with kidney disease under the supervision of A/Prof Stephen McDonald and A/ Prof Toby Coates, in addition to Dr Claudine Bonder from the Hanson Institute. In 2009. Dr Sen's work has included assays of endothelial progenitor cell number and function, for application in clinical studies in dialysis and transplant patients. He has continued to examine the rates of different types of hospital admissions for cardiovascular causes, comparing rates of myocardial infarction and cardiac failure between dialysis and transplant patients and the general population.

Professor Graeme Russ was successful in being awarded a Cellcept Australia Research Grant (CARG) for his study on the correlation of renal donor histopathology and function with long-term outcome in recipients of expanded criteria deceased donor organs: derivation of donor score which predicts likelihood of outcome events.

Dr Shilpa Prasad was awarded her PhD degree this year using a novel transplant model studying the immune biology in the common marmoset monkey. Tissue typing research continued in the laboratory under the supervision of A/Prof Toby Coates and Prof Graeme Russ. Ms Hooi Sian Eng finalised her studies on the significance of Luminex detected antibodies

in crossmatching. Ms Eng was awarded her PhD degree during 2009 and is now benefiting from her post doctoral research at the John Hopkins' Hospital in Baltimore. During 2009 other members of the Tissue Typing Laboratory presented clinical research at the Australasian South East Asian Tissue Typing Association meeting in New Delhi and at the American Society for Histocompatability and Immunogenetics in San Francisco.

South Australian and Northern Territory Islet Program

The South Australian and Northern Territory Islet Program (SANTIP) was extremely active this year in sending organs from South Australia and the Northern Territory to St Vincent's Institute in Melbourne for islet isolation. Dr Daisy Mohanasundaram continued with her expertise in rodent islet isolation in mice and rats. She has initiated a project in Type II diabetes to investigate the role of critical zinc transporters in islet biology. Ms Clare Mee has also utilised her expertise in small animal handling in isolation of islets from rodent pancreata. Mr Chris Drogemuller has developed a unique model of testing the variability of zinc transporter gene expression in isolated human islets. Chris, together with Dr Claire Jessup and A/Prof Toby Coates supervised Ms Amy Hughes to develop adenoviral gene therapy as a novel therapy to prevent apoptosis in transplanted islets. Amy was awarded a prestigious Trevor Prescott scholarship to assist in her PhD studies. SANTIP is prepared and is eagerly waiting to perform its first clinical transplant, after being at the brink of an islet transplant six times during 2009.

Mr Clyde Milner continues to provide laboratory supervision and management on the Islet Transplantation Program, while Islet Transplant nurse Ms Toni Miller has coordinated the transplant list. Four patients are on the active waiting list and are being constantly monitored in a new clinic at the Royal Adelaide Hospital conducted by A/ Prof Toby Coates and endocrinologist A/Prof David Torpy. Organ donors in South Australia continue to allow SANTIP to contribute a high number of pancreata for islet isolation and a further six organs for whole pancreas transplantation. The program will gain a second PhD student starting in 2010 to study the role of zinc transporter gene expression in diabetes.

"Organ donors in South Australia continue to allow SANTIP to contribute a high number of pancreata for islet isolation and a further six organs for whole pancreas transplantation."

Staff

Professor and Director Renal Unit and Renal Transplant Services

GR Russ MBBS FRACP PhD

Senior Staff Nephrologists

N Brook BSc MSc BM MRCS MD FRCS (Urol) RP Carroll MB BCh MA FRACP R Chacko MD DNB DM(Nephro) DNB FRACP APS Disney MBBS FRACP SP McDonald MBBS(Hons) FRACP PhD

Transplant Surgeons

MM Rao BSc MS MCh FACS FRACS AM CH Russell MB BCh FRACS BA(Hons) MA (Oxon) FRCS (Edin)

Renal Transplant Nephrologist

PTH Coates MBBS FRACP PhD

Senior Medical Scientist

R Krishnan BSc(Hons) PhD

Medical Scientists

C Milner BAppSc

S Kireta BSc

C Drogemuller BSc

D Mohanasundaram PhD

M Stephenson PhD

C Mee BHlthSc

A Milton BSc (part-time)

CJ Martin Fellow

C Jessup PhD

Research Assistants

A Hughes BSc(Hons)

Technical Officers

J Johnston D Yang MSc

Clinical Trials

B Hockley RN

C Russ RN

M Hockley RN

K Fisher

L Trowbridge RN

T Miller RN

C Chan RN

ANZDATA Registry

L Excell

B Livingston B Surv

E Steinmetz

C Young

C Leitch

A Brunskill MBBS MPH

(Epidemiology Fellow to Sept 2009)

H Dent BSc(Hons)

F Mensah MSc



Postgraduate Students

Completed Theses	
S Prasad	PhD, University of Adelaide, Department of Medicine. Thesis: "Studies of Immune Biology of the Common Marmoset: A Novel Non-human Primate Transplant Model"
H S Eng	PhD, University of Adelaide, Department of Medicine. Thesis: "Specificity and properties of Anti-HLA Antibodies Associated with Renal Allograft Rejection"
B Fedoric	PhD, University of Adelaide, Department of Medicine. Thesis: "Generation of Tolerogenic Human DC Through Rapamycin Conditioning and Genetic Modification with HLA-G"

Honours degrees	
M Coleman BHIthSc	(Hons) First Class University of Adelaide. "T Cells Acquire Antigen Presenting Function From Dendritic Cells (DC): DC Modified With Immunosuppressive Agents Subvert T Cell Antigen Presenting Function"
T Searcy BBiotech	(Hons) First Class Flinders University. "Human Mesenchymal Stem Cells Inhibit Monocyte-Derived Dendritic Cell Phenotype and Function"
J Cooney BBiotech	(Hons) 2A Flinders University. "The Effect Of Ectopic FOXP3 Expression on Mesenchymal Stem Cell Function"
C Hope BBiotech	(Hons) 2A Flinders University. "DNA Methylation of Adipogenic Genes in Mesenchymal Stem Cells during Adipogenic Differentiation"
R Yu BMedSc	(Hons) First Class University of Adelaide. "Calcium supplementation and its effects on bone loss in renal transplant recipients"

Continuing Postgraduate Students		
N Rogers mbbs fracp	"Specific targeting of dendritic cells with tolerogenic liposomes in allotrans plantation"	
M Collins MBChB FRACP	"Tolerogenic dendritic cell therapy in kidney transplantation"	
S Sen MBBS FRACP	"Investigation of classical and novel risk factors for cardiovascular disease and function in kidney disease"	
D Rojas BSc (Hons)	"Studies on the immunomodulatory effects of the inhibitory molecule PDL-2 in dendritic cells"	
T Matthews BSc (Hons)	"Role of Dendritic Cells in Immune Responses in Ischaemia Reperfusion Injury in the Kidney"	
A Hughes BSc (Hons)	"Transduction of pancreatic islets with insulin-like growth factor—II for transplantation in the treatment of type-I diabetes"	

Appointments	
C Milner	Affiliate Lecturer, School of Medicine Faculty of Health Sciences, The University of Adelaide.
M Stephenson	Affiliate Lecturer, School of Medicine Faculty of Health Sciences, The University of Adelaide.

TQEHresearch Research Report 2009

"We appreciate the generous support of the Muriel T Gunn Foundation to enable enhanced work to continue in the Renal Unit."

Grants

CellCept Australia. (Research grant) (CARG). Correlation of renal donor histopathology and function with long-term outcome in recipients of expanded criteria deceased donor organs: derivation of donor score which predicts likelihood of outcome events. (\$20,000 2009) Russ G.

Juvenile Diabetes Research Foundation. (Program grant) South Australian and Northern Territory Pancreatic Islet Isolation Program (\$851,728 2008-2009) 2006 – 2009, Russ G, Coates PTH, Morris R et al.

Juvenile Diabetes Research Foundation. Young scientist research travel grant (\$2,500 2009) Jessup C.

Juvenile Diabetes Research Foundation. Young scientist research travel grant (\$2,000 2009) Rojas D.

Kidney Health Australia. (Postgraduate Scholarship) Investigation of classical and novel risk factors for cardiovascular disease and function in kidney disease (\$31,000 2009) 2007-2009, Sen S.

NHMRC. (Capacity Building grant in Population Health) Improving population health by a multidisciplinary, multi-method focus on kidney disease of the young, the old and of Indigenous Australians (TQEH \$54,970 2009) 2007-2010, Craig J, Cass A, Irwig L, Chadban S, McDonald S, Devitt J, Macaskill P, Jones M, Howard K.

NHMRC. (2009 Equipment grant) The role of renal dendritic cells in infection under immunosuppression. (\$11,848 2009) Coates PTH, D'Andrea R.

NHMRC. (Postgraduate Medical Scholarship) Tolerogenic Dendritic Cells in Kidney Transplantation: studies in Common Marmoset Monkeys (\$32,628 2009) 2009-2011, Collins M.

NHMRC. (Postgraduate Medical Research Scholarship) Specific targeting of dendritic cells with tolerogenic liposomes in allotransplantation (\$32,628 2009) 2008-2010, Rogers N.

NHMRC. (Project grant # 565033) The role of renal dendritic cells in infections and immunity under immunosuppression (\$152,125 2009) 2009-2011, Coates PTH.

TQEH Research Foundation. (Small grant 2008) The ectopic expression of the transcription factor FoxP3 in dendritic cells (\$20,000 2008-2009) Krishnan R.

TQEH Research Foundation Strategic Initiatives Funding. (Program grant). To institute a centre for renal translational research (\$180,000 2009) 2009-2011, Russ G, Coates PTH, Krishnan R, McDonald S, Morris RG, Sallustio B.

TQEH Research Foundation/University of Adelaide. (Divisional Scholarship) (\$20,427 2009) Rojas DM.

TQEH Research Foundation. Honours Research Scholarships (\$16,000 2009) Coleman M, Cooney J, Yu R, Searcy T.

TQEH Research Foundation. (Near Miss grant 2008). The role of renal dendritic cells in ischaemia reperfusion injury (\$98,000 2008-2009) Coates PTH.

TQEH Research Foundation. (Small grant 2009) Screening for colorectal cancer in recipients of kidney transplants (\$10,000 2009) Collins M, Coates PTH, Teo E.

TQEH Research Foundation. (Small grant 2009) The role of Mesangial cells in transplant glomerulopathy (\$9,959 2009) Stephenson M, Coates PTH, Kireta S.

Trevor Prescott/Freemasons Scholarship. (\$20,000 2009) 2009-2011, Hughes A.

University of Adelaide. Overseas Conference Scheme (\$1,500 2009) Jessup C.

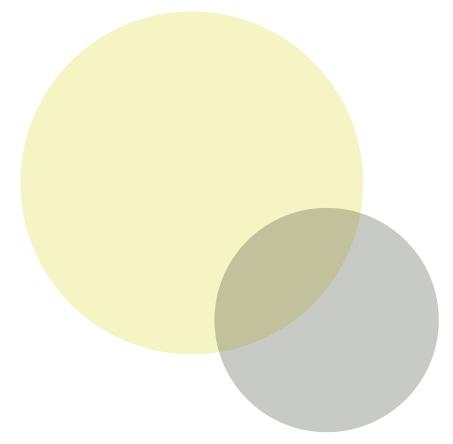
Contract research

Angioblast Systems Ltd. Studies on the therapeutic use of adult mesenchymal stem cells in degenerative diseases (\$192,000 2008-2009) Krishnan R.

Awards	
R Carroll	Mark Cock's Award from the TSANZ and TeamLife Transplant Australia.
M Collins	TQEH Research Day 2009. Winner Best Lay description. \$500.
A Hughes	Trevor Prescott Scholarship 2009-2011 \$20,000.
A Hughes	TSANZ Scientific Meeting Awards - Young Investigator Award.
C Jessup	Overseas Conference Scheme, University of Adelaide - \$1,500.
C Jessup	Young Scientist Research Travel Grant, JDRF - \$2,500.
MM Rao AM	Member of the Order of Australia – Queen's Birthday Honour. For service to medicine, particularly renal transplant surgery, as a mentor and educator, and through professional development.
MM Rao AM	'Lifetime Achievement Award' by the Indian Society of Organ Transplantation in recognition of his role for pioneering transplantation in India.
D Rojas	Young Scientist Research Travel Grant, JDRF - \$2,000.
D Rojas	ANZSN Young Investigator Finalist \$500.
D Rojas	TQEH Research Day 2009. Winner Senior PhD student section. \$1,000.
S Sen	TQEH Research Day 2009. Winner Poster section. \$500.
S Sen	TSANZ Scientific Meeting Awards - Kidney Health Australia Prize for the Best Presentation in the Field of Clinical Research.
S Sen	TSANZ Scientific Meeting Awards - Young Investigator Award.
R Yu	TQEH Research Day 2009. Winner Honours section. \$1,000.

Acknowledgements
The Renal Unit especially wishes to thank
The Queen Elizabeth Hospital Research Foundation for its continuing program, scholarship and small grants support.

We very much appreciate the generous support of the Muriel T Gunn Foundation to enable enhanced work to continue in the Renal Unit.



RESPIRATORY MEDICINE UNIT

Research Focus

- Best Practice/medication/counselling combination intervention for inpatient smoking cessation
- Positional aspects to obstructive sleep apnoea management
- Nitric Oxide
- Innovative forms of portable oxygen delivery

"The Respiratory Medicine Unit and Clinical Practice Unit have collaborated across multiple units at TQEH and beyond to evaluate the potential synergistic benefits of commencing smoking cessation, for inpatients, using latest anti smoking medication and Best Practice counselling."

Overview

A range of evidence based projects, pharmaceutical industry new drug trials, sleep-related and other studies are underway.

In December 2008, a group of TQEH Registrars, TQEH Project Officer, and a TQEH based medical student underwent a Cochrane training workshop in Adelaide, run by Vanessa Pitt, of the Melbourne Cochrane Centre. Using interactive online methods, the group of Respiratory clinicians/researcher officer/medical student learnt how to conduct Cochrane reviews. and now these reviews are well advanced. under the supervision of Brian Smith, and other members of the Australian Cochrane Airway Group network across most states of Australia. Several members of this group have gone on to participate at advanced Cochrane courses at the TSANZ ASM in Darwin (March 2009) and further Review completion coursework in Melbourne (November 2009).

The Respiratory Medicine Unit and Clinical Practice Unit have collaborated across multiple units (Cardiology, Neurology/Acute Stroke Service, and Vascular) at TQEH and beyond to evaluate the potential synergistic benefits of commencing smoking cessation, for inpatients, using latest anti smoking medication and Best Practice counselling. Varenicline, which has PBS approval (unlike nicotine replacement therapy), is superior to nicotine patches at smoking cessation, although has never been formerly evaluated when commenced in an inpatient setting. The South Australian Quit Line which is based on Greenhill Road, provides a year round service to smokers, in the form of highly supportive professionally trained counsellor support, and in combination

with TQEH Project Officers who have undergone SA Quit training via collaborator, John Lit (Flinders Medical Centre). The purpose of the project is to evaluate the impact of this inpatient initiated new medication/Best Practice counselling, to issue smoking cessation as a secondary prevention, in people admitted with smoking related illnesses.

The Pulmonary Function Laboratory is consolidating its formal comparison of lung function in Asian and non Asian subjects to evaluate the need for correction according to ethnicity, and exploring bronchial challenge techniques, including the use of Mannitol.

The Respiratory Research Unit continues to evaluate a range of new medications for COPD, Asthma, IPF and Bronchiectasis lead by Drs. Antony Veale and Jon Polasek.

The Respiratory Medicine Unit's Sleep Laboratory is evaluating the effects of exercise/weight loss/lifestyle upon the indicators of obstructive sleep apnoea, led by Chief Scientist Sean Homan, as well as looking at diagnosis and therapy of positional sleep apnoea, led by Dr A. Veale.

Brian Smith has collaborated with members of the British Thoracic Society to produce the 2008 "British Guidelines on the Management of Asthma".

Staff

Director

BJ Smith FRACP Dip Clin Epi PhD

Senior Consultants

AM Southcott FRACP
R Ruffin MD BSc(Hons) PhD FRACP
I Nikitins FRACP
A Veale PhD FRACP
J Polasek FRACP
A Roy FRACP

Advanced Trainee

Z Usmani M Chandratilleke

Principal Medical Scientist

S Homan MSc

Pulmonary Function Laboratory

D Keatley BSc(Biomed)(Hons)
A Herrero Adv RSC Cert of Science
N Leonardis BSc

Clinical Trials Unit Coordinator

K Boath Mgt Cert Adv Cert BHlthSc

Research Nurse

P Gluyas RN RM CC Cert

Sleep Laboratory

M Smith BSc

T Faulkner BPsych(Hons)

T Hams (Admin)

Respiratory Nurses

L Kotal RN RM CC Cert Post Grad Dip Health

Counselling

K Lawton BAN

Unit Pharmacist

T Jones B Pharm Dip Ed PhD

Secretarial

H Gummow

V Daly

Grants

Commonwealth Dept of Health & Aged Care. Australian Cochrane Airways Group Network (\$11,000 2009) Smith BJ et al.

NHMRC. Effect of asthma during pregnancy on placenta and foetus (\$216,550 2009) 2009-2011, Clifton V (Smith BJ A.I.)

Clinical Trials (Dr A M Southcott)

Bayer. Bronchitis Study designed to compare efficacy of Moxifloxacin® and Amoxycillin® antibiotics in subjects with acute exacerbations of chronic bronchitis (\$1,897 2009).

Boehringer Ingelheim. Asthma study designed to assess the efficacy of Spiriva® as add-on controller therapy on top of usual medication for subjects with severe asthma (\$28,270 2009).

Boehringer Ingelheim. LABA Emphysema study designed to assess efficacy of a new long acting medication for subjects with emphysema (\$69,883 2009).

Boehringer Ingelheim. Idiopathic Pulmonary Fibrosis study designed to evaluate efficacy of a new medication to prevent scarring of lungs and disease progression in subjects with Idiopathic Pulmonary Fibrosis (\$57,288 2009).

Sanofi. Insomnia study designed to assess efficacy of a new sleep medication for subjects with sleep maintenance insomnia (\$13,257 2009).

PhD Student

J Bignall "Positional effects of obstructive sleep apnoea" Supervisors: B Smith, A Veale

RHEUMATOLOGY UNIT

Research Focus

- Autoimmunity
- Epidemiology
- Immunogenetics
- Osteoarthritis
- Giant Cell Arteritis

Dr Maureen Rischmueller



"Genetic variation in the P2X7 receptor is providing important clues into the pathogenesis of Sjögren's syndrome."

Overview

The Department of Rheumatology strives to augment its clinical rheumatology services with research programs into the causation and complications of rheumatic diseases and evaluation of new generations of pharmaceutical agents for the treatment of arthritis. The major focus of this research is towards the immunogenetics, pathogenesis, and epidemiology and treatment of a number of rheumatic diseases.

Two important developments have occurred within the past year. The first is the opening of the new research facility at The queen Elizabeth Hospital (TQEH) which has enabled the relocation of the Rheumatology Research Laboratory from the Hanson Institute to TQEH. The second is the involvement of the Rheumatology Department in both the Centre for Inflammatory Diseases Research and the Health Observatory program grants funded by TOEH Research Foundation. These developments have enabled the consolidation of Rheumatology research in addition to strategic collaborations with opportunities for the integration of our clinical, scientific and epidemiological research interests.

Associate Professor Catherine Hill is chief investigator on an NHMRC funded randomized clinical trial of fish oil in the treatment of knee osteoarthritis and is a chief investigator on the Health Observatory Program grant funded by The Queen Elizabeth Hospital research Foundation. Her other current areas of investigation include population studies of musculoskeletal disorders, including data from the North West Adelaide Health Study (NWAHS) cohort study, influence of health literacy on health outcomes and chronic diseases, investigation of the association of malignancy and giant cell arteritis (GCA), establishment of SA GCA Registry, systematic reviews of steroid sparing agents in GCA and PMR.

Dr Maureen Rischmueller's research group, led by Medical Scientist Ms Sue Lester, continues to focus on the genetics of autoimmunity, providing insights into biological mechanisms underlying disease, and ultimately enabling identification of therapeutic targets. In addition to their large cohort of patients with Sjögren's syndrome, they, in collaboration with Drs Simon Burnet, Catherine Hill, and Samuel Whittle, are continuing to archive DNA and serum samples from a range of other rheumatic diseases, such as systemic lupus erythematosus, scleroderma osteoarthritis and giant cell arteritis. Further, they are archiving DNA from the NWAHS cohort, an important resource for research at TQEH. Their collaboration with Professor James Wiley, Nepean Hospital, Sydney, pertaining to the P2X7 receptor in Sjögren's syndrome is on-going. Genetic variation in the receptor is providing important clues to the pathogenesis of Sjögren's syndrome, and further Dr Bac Hai Tran has identified, and mapped the epitope, of a novel P2X7 autoantibody which has great potential to be both disease specific (and therefore be of use in a diagnostic capacity) and functionally important in the dryness, and other autonomic, symptoms associated with this disease.

Staff

Director/Senior Lecturer

M Rischmueller MBBS FRACP

Staff Specialists

S Burnet MBBS FRACP CL Hill MBBS MD MSc(Epi) FRACP SL Whittle MBBS FRACP

Registrar

M Wechalekar MBBS V Katikireddi MBChB(Hons) MRCP(UK)

Medical Scientists

S Lester BSc(Hons) H Tran BSc PhD

Technical Officer

J McLean

Clinical Trials Coordinators

S Downie-Doyle BSc(Hons) PhD R Battersby BSc Grad Cert Drug Development

Clinical Trials Assistant/Administrative Support

J Marrett BBus(Mkt) M Bubicich BSc(Hons) M Devine

Rheumatology Clinical Nurses

A Batty BNursing C Tosh Dip AppSc(Nursing)

Grants

NHMRC Project Grant (ID# 451900). Fish Oil in knee osteoarthritis (\$162,875 2009) 2008-2010, Hill CL, Cleland LG, Jones G, March LM.

TQEH Research Foundation Strategic Initiatives Funding Program Grant. The Health Observatory (\$250,000 2009) 2009-2013, Adams RJ, Wilson DW, Hill CL, Visvanathan R, Ruffin RE, Wittert G.

TQEH Research Foundation Strategic Initiatives Funding Program Grant. Inflammatory mechanisms and therapies in chronic disease - asthma, COPD, stroke, cerebrovascular disease, rheumatology diseases and chronic rhinosinusitis (\$175,000 2009) 2009-2011. Wormald PJ, Koblar SA, Lang CJ, Lester S, Rischmueller M, Tan LW, Zalewski P.

New grants awarded for 2010

Arthritis Australia. (Project grant) Association of n-3 fatty acid levels and serum COMP levels with inflammation, symptoms and cartilage volume in knee osteoarthritis. (\$35,000 2010) Hill CL, Cleland LG, Jones G, March LM.

Arthritis Australia. (Project grant) Novel autoantibodies target purinergic receptors in patients with Sjogren's syndrome. (\$15,000 2010) Tran H, Neufing P, Rischmueller M.

TQEH Research Foundation. (Small grant) Is XIAP a susceptibility gene for asthma? (\$5,000 2010) Zalewski P, Roscioli E, Lester S.



SURGERY, University of Adelaide Discipline of

Research Focus

- Liver tumour ablation
- Abdominal adhesion prevention
- Vascular disease risk factors
- Sinus surgery and its pathophysiology
- Fast track colorectal cancer surgery
- Single port surgery
- Increase use of local anaesthesia for day surgery

Professor Guy Maddern



"The University of Adelaide Discipline of Surgery has also become a central hub for stimulating surgical research around the country."

Overview

The University of Adelaide Discipline of Surgery this year has again provided a large range of research endeavours and publications. Over sixty papers have been produced in areas as diverse as surgical history, upper gastrointestinal cancer surgery, ear nose and throat surgery, vascular surgery, colorectal surgery and plastic surgery.

The nature of the research output from the Discipline has been broad-based with a large number of clinical reports, some important laboratory and benchtop work and a considerable amount of research involving animal experimentation. The outcomes to date have led to a number of research grant successes, in particular the awarding by NHMRC of over \$1 million to Associate Professor Rob Fitridge for his work on aortic aneurysm risk factors and development of a predictive model to enable more timely management of them.

Professor PJ Wormald has also been successful in obtaining ongoing support from the Garnett Passe & Rodney Williams Memorial Foundation and with his Chief Scientist, Dr Lor Wai Tan, has been successful in supervising a large number of higher degree students during their surgical training. The work of Professor Wormald has been linked with Professor Maddern in attempting to develop the utility of novel treatments for the assessment of intraabdominal adhesions which, if successful, would have an enormous impact on the cost and morbidity of surgical care.

The University of Adelaide Discipline of Surgery has also become a central hub for stimulating surgical research around the country and for the second year has hosted the Surgical Research Society annual meeting at the Basil Hetzel Institute. This is likely to become an annual event at the

Institute and saw over forty two papers presented by young surgical researchers in November 2009.

The pressure of delivering high quality research with the almost insatiable demand for surgical service delivery is a difficult one; however the Discipline seems to be reaching a sustainable balance.

Staff

RP Jepson Professor of Surgery Head, Discipline of Surgery Head, School of Medicine Director, Division of Surgery Director of Research, Basil Hetzel Research Institute

GJ Maddern MBBS PhD MS MD FRACS

Associate Professors

R Fitridge MBBS MS FRACS
N Rieger MBBS MS FRACS
WEW Roediger MBBCh MSc DPhil(Oxon) FRACS

Senior Lecturers

M Bruening MBBS MS FRACS

M Goggin MBBCh BAO FRCSI(Ophth) FRCOphth DO

J Miller MBBS FRACS

G Rees MBBS FRACS

D Rodda MBBS FRACS

D Walsh MBBS FRACS

Staff Specialists

A Anthony MBBS FRACS

C Barry MBBS, MRCOG, FRANZCOG

N Giles BMBS, FRACP

M Hamilton MBCHB, FRACS

P Hewett MBBS FRACS

H Kanhere MBBS, FRACS

C Lai MBBS FRACS

A Singla MBBS, FRANZCOG

D Tonkin MBBS, FRACS

D Walters MBBS FRACS

N Wright MBBCH, FRSA

P Subramaniam MBBS FRACS

Clinical Title Holders

S Ali Clinical Lecturer

A Anthony Clinical Lecturer

W Babidge Affiliate Lecturer

F Bridgewater Clinical Assoc/Professor

P Byrne Clinical Lecturer

B Carney Clinical Lecturer

D Close Clinical Lecturer

P Cowled Affiliate Senior Lecturer

A Cowin Affiliate Associate Professor

P Drew Visiting Research Fellow

A Economos Clinical Lecturer

P Fleming Clinical Lecturer

H Forbes Clinical Lecturer

N Gehling Clinical Lecturer

P Hewett Clinical Professor

V Humeniuk Clinical Lecturer

A Karagiannis Clinical Lecturer

A Karatassas Clinical Lecturer

C Lai Clinical Senior Lecturer

M Lloyd Clinical Lecturer

A Luck Clinical Senior Lecturer

E Mah Clinical Senior Lecturer

B McCusker Clinical Lecturer

R McGovern Clinical Lecturer

K Moretti Clinical Lecturer

J Muecke Clinical Lecturer

S Neuhaus Clinical Assoc/Professor

R Parkyn Clinical Assoc/Professor

M Patkin Clinical Lecturer

C Pozza Clinical Lecturer

T Proudman Clinical Senior Lecturer

M Rao Clinical Assoc/Professor

S Raptis Clinical Senior Lecturer

T Rayner Affiliate Lecturer

D Roach Clinical Senior Lecturer

C Russell Clinical Associate Lecturer

S Sabaratnam Clinical Lecturer

N Sacks Clinical Professor

R Strickland Clinical Lecturer

P Stuart Clinical Lecturer

P Sutherland Clinical Senior Lecturer

LW Tan Affiliate Senior Lecturer

M Tie Clinical Lecturer

RP Jepson Research Fellow

P Cowled PhD

"The pressure of delivering high quality research with the almost insatiable demand for surgical service delivery is a difficult one; however the Discipline seems to be reaching a sustainable balance"

Postgraduate Students

PhD candidates	
S Krishnan BHlthSc(Hons)	"The clinical evaluation of fast-track surgery including extended local anaesthetic infusion for post-operative pain"
N. D l!! no (ii	

N Ruzehaji BSc(Hons) BAppSc(Podiatry) The role of Flii in the pathology of diabetic wounds"

J Smith PhD "The litigation threat to surgical practice: Legal reform and risk

management"

Honours candidates

D Dawson	"Pathophysiology of small bowel	damage following hind limb

ischaemia reperfusion injury"

J Smale "Bimodal electric tissue ablation (BETA) as an adjunct to liver

resection"

Master of Surgery

P Ho MBBS "Physician Assistants: Trialling a new health professional

in the South Australian health System

C Lauder MBChB MRCS "Peritoneal adhesion formation and modulation"



Technical Officers

B Hutchens M Slawinski M Smith

Research Assistants

S Lane BA(Mgt)(Hons)
L Leopardi BSc BEng(Biomedical)(Hons)
S Page BMedSc(Hons)

Clinical Trials Coordinators

C Chian BSc(Hons) LLB GDLP B Sivendra BMedRad(NucMed)

Colorectal Research Coordinators

S Singh BPharm MPharm J Stephens BSc(Hons) MPH

Vacation Scholarships 2009-10 W Pan

Grants

Australian Research Council. Managing and mining evolving ontologies through pattern languages and data mining. ASERNIP-S in collaboration with Flinders University and Australian Computer Society (SA Branch) (\$49,300 2009) 2006–2009, Maddern GJ.

Commonwealth Department of Health and Aged Care. Horizon Scanning ASERNIP-S. (\$130,000 2009) 2006–2009, Maddern GJ.

Commonwealth Department of Health and Aged Care. Systematic reviews ASERNIP-S. (198,000 2008–2009) Maddern GJ.

Commonwealth Department of Health and Aged Care. Simulated Surgical Skills Program ASERNIP-S. (\$5,000,000 2008–2011) Maddern GJ.

Department of Health Queensland. Queensland Audit of Surgical Mortality ASERNIP-S. (\$333,000 2009) 2006–2009, Maddern GJ.

Department of Health, Tasmania. Tasmanian audit of surgical Mortality ASERNIP-S. (\$29,000) 2007–2009 (\$165,000 2008-2009) 2008–2011, Maddern GJ.

Department of Health Victoria. Victorian Audit of Surgical Mortality ASERNIP-S. (\$48,895 2008-2009) 2007–2009, Maddern GJ.

Department of Health, Western Australia. WA Audit of Surgical Mortality ASERNIP-S. (\$303,000 2008-2009) 2008–2010, Maddern GJ.

National Breast Cancer Centre. National Breast Cancer audit ASERNIP-S. (\$240,000 2008-2009) 2006–2009, Maddern GJ.

NHMRC Development of novel treatment for wounds. (\$62,500 2009) 2008–2010, Cowin A.

NHMRC Project Grant. Prospective evaluation of a model to predict outcomes following endovascular aortic aneurysm repair. (\$253,950 2009) 2009–2013, Fitridge R, Boult M, Golledge J, Maddern GJ, Thompson M, Barnes M.

Royal Australasian College of Surgeons Foundation for Surgery. Louis Waller Medico-Legal Scholarship. (\$60,000 2009) Smith J.

Royal Australasian College of Surgeons/ MMM/CCANZ. Colorectal Cancer Audit ASERNIP-S. (\$69,388 2008–2009) Maddern GJ.

Royal Australasian College of Surgeons/ MMM/CCANZ. Colorectal Cancer Audit ASERNIP-S. (\$115,000 2008–2009) Maddern GJ.

South Australian Department of Health. ENT Funding. (\$454,000 2008–2009) Maddern GJ.

South Australian Department of Health. South Australian Audit of surgical mortality ASERNIP-S. (\$170,000 2008-2009) 2006–2009, Maddern GJ.

TQEH Research Foundation Strategic Initiatives Funding. (Program grant) Vascular Diseases and Therapeutics Research. (\$180,000 2009) 2009–2011, Horowitz JD, Beltrame J, Zeitz C, Wilson DP, Morris RJ, Sallustio B, Chirkov Y, Kennedy J, Cowled PA.

TQEH Research Foundation Strategic Initiatives Funding. (Program grant) Development and Assessment of novel surgical technologies and their introduction into the Australian healthcare system. (\$250,000 2009) 2009–2013, Maddern G, Wormald PJ, Jamieson G, Fitridge R, Hewett P.

TQEHresearch

Research Report 2009

TQEH Research Foundation. (Small grant 2009) Breast cancer in the elderly client – determining the evidence to improve treatment outcomes. (\$16,000 2009) Walsh D, Redman K.

TQEH Research Foundation. (Small grant 2009) Breast cancer follow up at The Queen Elizabeth Hospital – developing future models of care. (\$14,000 2009) Walsh D, Redman K.

TQEH Research Foundation/University of Adelaide. Postgraduate Divisional Research Scholarship (\$20,427 2009) Ho P.

TQEH Research Foundation. Honours Research Scholarship (\$4,000 2009) Smale J.

ORTHOPAEDICS AND TRAUMA, TQEH Department

Staff

Director

C Butcher MBBS FRACS FAOrthA (to Oct 09)

G Morrison MBChB FRCS (Ed) FRACS FAOrthA (from Nov 09)

Deputy Director

G Morrison MBChB FRCS (Ed) FRACS FAOrthA (to Oct 09)

N Cullen MD FRCS(C) FRACS FAOrthA (from Nov 09)

Senior Lecturer

A Fagan MBBS (Adel) FRCS (Glas)

Visiting Specialists

ET Mah MD BMBS FRACS FAOrthA

P Lewis MBBS FRACS FAOrthA

O Osti MD PhD FRACS FAOrthA

L Ferris MBBS BSc(Med) FRACS

R Montgomery MBBS FRACS

J van Essen MBBS FRACS(Ortho)

 $W. \ Duncan \ \mathsf{MBBS} \ \mathsf{FRACS}(\mathsf{Orth})$

G Nimon MBBS FRACS(Orth)
C Begg MBBS FRACS(Orth)

T Stevenson MBChB FRCS FRACS FAOrthA

N Pourgeizis MBBS FRACS(Orth)

C Gooi MBBS FRACS(Orth)

Arthroplasty Fellow

A Hopcroft (Trauma & Orth)

Spinal Fellow

S Zahari MBBS Malaya, MMed (Ortho)

Hand and Upper Limb Fellow

T Sharpe MB CHB Glasgow FRACS

Project Officer (CNAHS)

M Sutton B Physio

Arthroplasty Outcomes Officer

G West B Physio

Research Officer

T Mayo B Psych(Hon)

Executive Secretary

B Stoddard

Secretaries

E Smythe

L Georgeff

J Whatling

Nursing Staff

L Thomas CNC – Joint Replacement J Gould CNM – Joint Replacement

Orthopaedics and Trauma current research activities

TQEH Orthopaedics and Trauma currently performs the second largest number of primary arthroplasty procedures of the public hospital units in South Australia. In the future TQEH will consolidate its position as a major centre for conducting clinically based research for the monitoring of prosthetic implants. The TQEH uses internationally recognised outcome measures for the purposes of Quality Assurance and as an approach to evidence based decision making.

The Unit has expanded its base research infrastructure to allow for the implementation of consultant driven research trials deemed to be of significant interest to the orthopaedic as well as the wider community. As one of the Orthopaedic teaching hospitals, this facility also gives the opportunity for Orthopaedic Fellows, Trainees, Senior Registrars and orthopaedic junior medical staff to participate in research culminating in the potential for presentations and publications necessary for their career progress.

"TQEH"
Orthopaedics and Trauma currently performs the second largest number of primary arthroplasty procedures of the public hospital units in South Australia."

"The Unit has expanded its base research infrastructure to allow for the implementation of consultant driven research trials deemed to be of significant interest to the orthopaedic as well as the wider community."

Trials completed

Lewis P, Butcher C, West G, Deo H, Rickman M, Chatterji U, Prakash U, Gillespie P, Mount P, Ludbrook G. Cognitive Function following Total Joint Arthroplasty – is there a problem?

Recruitment complete – Follow up continues

Bauze R, Clayer M, Lewis P, Stevenson T, Morrison G, Butcher C, Waters D, Mah E, Brook P, Cullen N. A Comparative Trial between the Spectron Total Hip Replacement and the Exeter Total Hip Replacement.

Munyard A, Cullen N. A Trial of the TRAC Mobile Bearing Total Knee Replacement. Butcher C, Lewis P, Stevenson T, Morrison G, Waters D, Mah E, Brook P, Bauze R, Clayer M. A Comparative Trial between the NexGen Fixed Bearing Total Knee Replacement and the NexGen Rotating Platform Total Knee Replacement.

Recruitment continues

Butcher C, Lewis P, Phillips S, Duncan W, Morrison G, van Essen J, Cullen N, West G. Functional and Perceived Outcome Study Comparing Posterior Cruciate Substituting and Cruciate Retaining Inserts in a Multi-axis Radius Knee.

Lewis P, Butcher C, Phillips S, West G. Functional Outcome Study Comparing Single and Multi-axis Femoral Component Designs of Knee Replacements.

Lewis P, Butcher C, Phillips S, Gillespie, P, Morrison G, Cullen N, Duncan W, West G Functional Outcome Study Comparing Small and Large Diameter Metal on Metal Hip Prostheses.

Deshaies A, Lewis P, Butcher C, Gillespie P. Evaluation of Blood Flow in the Proximal Tibia during Unicompartmental and Total Knee Replacements.

Mah E, Sharma K. Comparative study on the clinical outcome of arthrodesis versus arthroplasty for small finger carpo-metacarpal arthritis – a prospective randomized study.

Ferris L, Cullen N, Wilkinson D, Fintland J. Functional Outcome Study Treating Tendinopathy in and around the foot using Hyperbaric Oxygen (HBO) treatment.

New Trials

Morrison G, Cullen N, Duncan W, Begg C, van Essen J, Lewis P, Montgomery R. Total Knee Arthroplasty Using Patient Specific Templating – An Outcome Study.

Funding for research in this department has been obtained totally from industry contributions to the Orthopaedic and Trauma Research Fund. In 2009 contributions have come from Stryker (\$41,800) and Biomet (\$14,850).



THERAPEUTICS RESEARCH CENTRE, University of South Australia

Research Focus

The general theme of our research at the Therapeutics Research Centre, is the investigation of pharmacological strategies that may improve quality of life and other patient outcomes.

Our work has been at all levels of therapeutic research, namely: drug design, drug delivery, pharmacokinetics, toxicology and quality use of medicines and natural products for a range of diseases and for patients in institutions and at home.

Overview

The Director of this Unit, Professor Michael Roberts, is an Australian National Health & Medical Research Council Senior Principal Research Fellow based at both The Institute (Basil Hetzel Institute) (affiliated with the UniSA School of Pharmacy) and the School of Medicine at Princess Alexandra Hospital in Brisbane, Australia. His research interests are in experimental and clinical therapeutics and in pharmaceutical science. Staff began working at the BHI in August 2009 in collaboration with the research groups based in Brisbane and UniSA City East campus and the group will grow significantly in the year ahead.

Skin

The Topical Drug Delivery Group's interests range from practical aspects of drug delivery system design through to theoretical investigation and mathematical modelling of penetration and distribution of solutes within various skin layers. Publications arising from our work have dealt with the relationships between physical or chemical properties of topically applied drugs and their distribution within the skin, as well as the effect of various skin pre-treatments on subsequent drug permeation. The group has also published invited reviews on factors influencing the formation of drug reservoirs within the skin following topical application and the latest developments in physical forms of topical drug delivery, such as jet injectors and electrically-enhanced permeation technologies.

Areas of research include:

- Effect of drug & cosmeceutical structure on skin permeability kinetics
- Effect of vehicle/formulation on skin absorption
- Targeting of drugs & cosmeceuticals into hair follicles

- Enhancement of drug & cosmeceuticals delivery using physical techniques (iontophoresis, sonophoresis, abrasion)
- Physiological factors affecting drug & cosmeceuticals distribution in the skin
- Effect of blood flow on drug & cosmeceuticals clearance from the skin and tissue distribution
- Prediction and modeling of drug & cosmeceuticals skin penetration kinetics
- Effect of various skin diseases on drug & cosmeceutical absorption

Liver

Current areas of liver research include the:

- Effects of various liver diseases
 (e.g cirrhosis, non-alcoholic fatty
 liver disease) on drug hepatic
 pharmacokinetics
- Relationship between the severity of the liver disease and drug levels in liver transplant patients
- Effects of repeat dosing of a vasoactive drug on its own hepatic pharmacokinetics
- Effects of cardiovascular diseases
 (e.g. heart failure, primary hypertension,
 atherosclerosis) on drug disposition in
 the liver
- Pharmacokinetics of sulphonylureas and several antibiotics in the pancreas

Clinical Analyses

The research interests of the Drug Analysis and Medicinal Chemistry Group include:

- Clinical sample analysis by HPLC & LCMS.
 Assay development for drugs and small molecules in biological fluids
- Synthesis of novel drugs and drug derivatives for assessment in ADMET studies.

Clinical Imaging and Modelling Group

The Imaging and Modelling Group focuses on the contribution that the physical and mathematical sciences can make to our "The Topical Drug Delivery Group's interests range from practical aspects of drug delivery system design through to theoretical investigation and mathematical modelling of penetration and distribution of solutes within various skin layers."

"However, it also incorporates the use of cutting-edge methods and technologies to improve our understanding of transdermal permeation, including molecular simulation and fluorescence microscopy."

research. This includes the development of pharmacokinetic models to describe transdermal permeation, using traditional statistical methods (in conjunction with the Topical Drug Delivery Group). However, it also incorporates the use of cutting-edge methods and technologies to improve our understanding of transdermal permeation, including molecular simulation and fluorescence microscopy.

Research interests include:

- Pharmacological modelling of transdermal permeation processes;
- Molecular modelling of transport processes in the stratum corneum;
- Application of microscopy to transdermal penetration studies; and
- Application of microscopy in skin pathology assessment.

Staff

UniSA Research Chair: Therapeutics & Pharmaceutical Science

MS Roberts BPharm PhD DSc

UniSA Research Fellow

TA Robertson BSc PhD

Grants

NHMRC. (Project grant # 569710) Pharmacodynamics in Liver Disease and in Liver Surgery. (\$288,592 2009) 2009-2011, Roberts MS.

The Queen Elizabeth Hospital Research Foundation. (Small grant 2009) An investigation of pharmacokinetic-pharmacodynamic characteristics of various beta-lactam antibiotics in patients with sepsis using microdialysis (\$4,000 2009) Peake S, Robertson T, Lipman J, Roberts J, Roberts M.







Publications

ANAESTHESIA, Department of Papers

Kadam VR, Moyes D, Moran JL. Relative efficiency of two warming devices during laparoscopic cholecystectomy. *Anaesthesia & Intensive Care*. 2009; 37(3):464-8.

CARDIOLOGY UNIT

Papers

Ball CJ, Wilson DP, Turner SP, Saint DA, Beltrame JF. Heterogeneity of L- and T-Channels in the Vasculature: A Rationale for the Efficacy of Combined L- and T-Channel Blockade. *Hypertension*. 2009; 53(4):654-60.

Beltrame JF, Crea F, Camici P. Advances in Coronary Microvascular Disease. *Heart Lung Circ.* 2009; 18(1):19-27.

Beltrame JF, Ganz P. Evaluating patients with persistent chest pain and no obstructive coronary artery disease. *JAMA*. 2009; 302(6):622-3.

Beltrame JF, Horowitz JD. The 56th Cardiac Society of ANZ Annual Scientific Meeting: Focused Symposia on Public Health. *Heart Lung Circ*. 2009; 18(2):93.

Beltrame JF, Horowitz JD. The 56th Cardiac Society of ANZ Annual Scientific Meeting: Focused Symposia on Basic and Clinical Science. *Heart Lung Circ.* 2009; 18(1):2.

Beltrame JF, Weekes AJ, Morgan C, Tavella R, Spertus JA. Prevalence of Weekly Angina Among Patients with Chronic Stable Angina in Primary Care Practices. The Coronary Artery Disease in General Practice (CADENCE) Study. *Arch Intern Med.* 2009; 169(16):1491-99.

Keech A, Horowitz JD. Cost-effectiveness considerations of cardiovascular therapeutics. *Heart Lung Circ.* 2009; 18(2):118-22.

Kennedy JA, Hua X, Mishra K, Murphy GA, Rosenkranz AC, Horowitz JD. Inhibition of calcifying nodule formation in cultured porcine aortic valve cells by nitric oxide donors. *Eur J Pharmacol*. 2009; 602:28-35.

Maseri A, Beltrame JF, Shimokawa H. Role of Coronary Vasoconstriction in Ischemic Heart Disease and the Search for Novel Therapeutic Targets. *Circ J.* 2009; 73(4):394-403.

Ngo DT, Sverdlov AL, McNeil JJ, Horowitz JD. Correlates of arterial stiffness in an ageing population: role of asymmetric dimethylarginine. *Pharmacol Re.* 2009; 60(6):503-7.

Ngo DT, Sverdlov AL, Willoughby SR, Nightingale AK, Chirkov YY, McNeil JJ, Horowitz JD. Determinants of occurrence of aortic sclerosis in an aging population. *JACC Cardiovasc Imaging*. 2009; 2(8):919-27.

Rajendran S, Willoughby SR, Chan WPA, Liberts EA, Heresztyn T, Saha M, Marber MS, Norman RJ, Horowitz JD. Polycystic Ovary Syndrome is Associated with Severe Platelet and Endothelial Dysfunction in Both Obese and Lean Subjects. *Atherosclerosis*. 2009; 204(2):509-14.

Ritchie RH, Irvine JC, Rosenkranz AC, Patel R, Wendt IR, Horowitz JD, Kemp-Harper BK. Exploiting cGMP-based therapies for the prevention of left ventricular hypertrophy: NO* and beyond. 2009. *Pharmacol Ther*. 2009; 124(3):279-300.

Wilson DP, Ball CJ, Turner SP, Saint DA, Beltrame JF. Response to Combined L-and T-Channel Blockade is Better than L-Channel Blockade Therapy. *Hypertension*. 2009; 54(1):e3-4.

Book Chapters

Kucia AM, Beltrame JF. Presentations of Acute Coronary Syndromes. In AM Kucia and T Quinn (ed) Acute Cardiac Care – A Practical Guide for Nurses.

Wiley-Blackwell, West Sussex, UK. Chapter 18, Pg 167-77, 2010.

Abstracts

Kennedy JA, Murphy GA, Mishra K, Horowitz JD, Inhibition of TGF-beta1 induced calcifying nodule formation by prostanoid receptor stimulation in porcine aortic valve interstitial cells. *European Journal of Heart Failure Suppl.* 2009; 8(2):1273.

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Monajjemzadeh F, Hassanzadeh D, Valizadeh H, Siahi-Shadbad MR, Mojarrad JS, Robertson T, Roberts MS. Assessment of feasibility of maillard reaction between baclofen and lactose by liquid chromatography and tandem mass spectrometry, application to pre formulation studies. *AAPS PharmSciTech.* 2009; 10(2):649-59.

Book chapters

Liu X, Kruger P, Roberts MS. *Yearbook* of *Intensive Care and Emergency Medicine*. edit J.-L Vincent, Springer Berlin 2009; P-859-869.

Invited Presentations at International and National Meetings

CONFERENCE TITLE & DATE	TITLE OF TALK/POSTER	ATTENDEE NAME
ANAESTHESIA, Department of		
3rd Pan-Asian Nysora Symposium, Kuala Lumpur, Malaysia, February 2009	Transverse Rectus Abdominis Myocutaneous (TRAM) flap breast reconstruction – The use of Tranversus Abdominis Plane (TAP) block and paravertebral block – case report	V Rao Kadam
CARDIOLOGY UNIT		
	Hataya ayan itu af Land T Channala in the Magaylatuwa an ayalan ating	C Dell DD Wilson
Heart Foundation Conference, Brisbane, Australia, May 2009	Heterogeneity of L- and T-Channels in the Vasculature: an explanation for the improved efficacy of combined L- and T-blockade	C Ball, DP Wilson, S Turner, D Saint, JF Beltrame
Heart Foundation Conference, Brisbane, Australia, May 2009	Acute Simvastatin Treatment Attenuates Vascular Constriction via activation of Myosin Phosphatase	S Copley, JF Beltrame, DP Wilson
Heart Foundation Conference, Brisbane, Australia, May 2009	Acute Effects of Hydrophilic and Lipophilic Statins on Human IMA and on Isolated Beating Heart Model	N Ghaffari, J Edwards, JA Kennedy, JF Beltrame
Heart Foundation Conference, Brisbane, Australia, May 2009	Pravastatin and Microvascular Vasomotor Reactivity	N Ghaffari, JA Kennedy, JF Beltrame
6th International Meeting Intensive Cardiac Care, Tel Aviv, Israel, October 2009	Severe angina pectoris: beyond revascularisation	JD Horowitz, P Pati, A Sverdlov, RG Morris, BC Sallustio, S Unger, JA Kennedy, JF Beltrame
57th Cardiac Society of Australia & New Zealand, Sydney, Australia, August 2009	Prevalence of Coronary Slow Flow in Patients Undergoing Coronary Angiogram in a Large Teaching Hospital	L Jesuthasan, JF Beltrame, T Marwick
European Society of Cardiology, Barcelona, Spain, September 2009	Low 25-hydroxyvitamin D levels are associated with elevated plasma ADMA and C-reactive protein concentrations: nexus with cardiovascular disease	DTM Ngo, AL Sverdlov, JJ McNeil, JD Horowitz
57th Cardiac Society of Australia & New Zealand, Sydney, August 2009	Impact of perhexiline therapy on left ventricular function and cardio- vascular events in patients with refractory congestive heart failure (CHF)	PK Pati, AL Sverdlov, JD Horowitz
Heart Foundation Conference, Brisbane, Australia, May 2009	Endothelin-1-mediated Vasoconstriction Involves Rapid Protein Kinase C and Sustained Rho Kinase Activation	K Rajopadhyaya, JF Beltrame, DP Wilson
American Heart Association Scientific Sessions 2009, Orlando, USA, November 2009	Plasma concentrations of asymmetric dimethylarginine (ADMA) predict LV mass independent of afterload. Oral presentation at the American Heart Association Scientific Sessions	AL Sverdlov, DT Ngo, AK Nightingale, S Rajendran, T Heresztyn, JD Horowitz
Heart Foundation Conference, Brisbane, Australia, May 2009	Quality of Life Outcomes in Chronic Stable Angina Patients Treated with PCI or Medical Therapy	R Tavella, N Cutri, JF Beltrame
57th Cardiac Society of Australia & New Zealand, Sydney, Australia, August 2009	Plasma proteomic investigations identify novel oxidative and inflammatory proteins involved in the acute presentation of Coronary Slow Flow Patients	V Kopetz, M Penno, P Hoffmann, JF Beltrame
CLINICAL PHARMACOLOGY UNIT	T	Т
Pharmacogenomics Cong, Hinxton, USA, September 2009	Impact of donor and recipient ABCB1 and CYP3A5 genetics on kidney transplant outcome	JK Coller, AA Somogyi, BD Noll, GR Russ, PT Coates, RG Morris, BC Sallustio
AACB, Brisbane, Australia, September 2009	Reporting of drug concentrations: Mass or molar units?	MP Doogue, SJ Bryant, RO Fullinfaw, KF llett, JO Miners, RG Morris, GDR Jones
ASCEPT NZ Section, Invited Plenary Lecture, Dunedin, New Zealand, September 2009	Are therapeutic drug assay labs misleading clinical staff? Can we do it better?	RG Morris
Improving Outcomes in Nephrology, Melbourne, Australia, September 2009	Immunosuppressant drug monitoring	RG Morris
ASCEPT Annual Scientific Meeting, Sydney, Australia, December 2009	Pharmacogenetics of Renal Transplantation	BC Sallustio
Belgium & Luxemburg Toxicology Society Meeting, Leuven, Belgium, March 2009	HPLC-MS/MS assay for the determination of Imatinib and its metabolites CGP74588 concentrations in plasma	IS Westley

CONFERENCE TITLE & DATE	TITLE OF TALK/POSTER	ATTENDEE NAME
ENDOCRINOLOGY UNIT	•	•
3rd International Congress on Prediabetes and the Metabolic Syndrome, Nice, France, April 2009	Population attributable risk (PAR) of overweight and obesity on chronic diseases: South Australian representative, cross-sectional data, 2004—2006	E Dal Grandea, T Gill, L Wyatt, CR Chittleborough, PJ Phillips, AW Taylor
10th National Rural Health Conference Proceedings, Cairns, Australia, May 2009	Building and supporting a diabetes education workforce	J Giles, K Visentin, P Phillips
3rd International Congress on Prediabetes and the Metabolic Syndrome, Nice, France, April 2009	Development of Metabolic Syndrome affects Health-Related quality of life. Vol 1, Supplement 1, April 2009, A96	P Phillips, K Baldock, A Taylor
3rd International Congress on Prediabetes and the Metabolic Syndrome, Nice, France, April 2009	Diabetes Incidence: Seven-Fold Risk among those with Metabolic Syndrome. Vol 1, Supplement 1, April 2009, A33 Prediabetes and the Metabolic Syndrome Abstract Book)	A Taylor, K Baldock, P Phillips
GASTROENTEROLOGY AND HEPATOLOGY U	JNIT	
Australian Gastroenterology Week, Sydney, Australia, October 2009	The gut microflora of individuals with ulcerative colitis (remission or mild) differs from healthy individuals	CT Christophersen, S Kang, C McSweeney, M Morrison, I Roberts-Thomson, MA Conlon
Australian Gastroenterology Week, Sydney, Australia, October 2009	Aetiology of macroscopic gastritis detected during gastroscopy	AM Chung, AG Cummins
Australian Gastroenterology Week, Sydney, Australia, October 2009	Wnt expression during growth of the small intestine in infancy	R Donato, IA Penttila, AG Cummins
Australian Gastroenterology Week, Sydney, Australia, October 2009	Modulation of the intracellular redox state induces apoptosis in the Caco-2 cell line	JK Fauser, RN Butler, AG Cummins, GM Matthews, S Howarth
Australian Gastroenterology Week, Sydney, Australia, October 2009	The role of video capsule endoscopy in suspected coeliac disease patients with positive coeliac serology	I Lidums, AG Cummins, E Teo
Australian Gastroenterology Week, Sydney, Australia, October 2009	Video capsule endoscopy findings in coeliac disease after 12 months on a gluten-free diet	I Lidums, AG Cummins, E Teo
Australian Gastroenterology Week, Sydney, Australia, October 2009	Emu oil increases crypt depth but only minimally affects other indictors of colonic integrity in a rat model of colitis	S Mashtoub, RJ Lindsay, KA Lymn, TWV Acott, R Yazbeck, AG Cummins, RN Butler, GS Howarth
14th International Congress of Mucosal Immunology, Boston, USA, July 2009	Breast milk regulates intestinal and immune development during food challenge in rats genetically predisposed to allergy	IA Penttila, R Grose, K Lymn, AG Cummins, K Tooley
Australian Gastroenterology Week, Sydney, Australia, October 2009	Performance and establishment of a learning curve with white light endoscopy vs narrow band imaging in diminutive colorectal polyps	R Singh, YM Bhat, PH Thurairajah, R Walmsey, M Bourke, A Moss, R Chen, P Bampton, I Roberts-Thomson, N Nguyen, M Schoeman, G Nind, G Tucker, W Tam
GYNAECOLOGY, Department of		
Continence Foundation of Australia, Annual Scientific Meeting, Adelaide, Australia, November 2009	The effect of vaginal topical oestrogen replacement on female sexual function	C Barry (Chairman, convenor, presenter)
HATMATOLOGY AND MEDICAL ONGOLOGI	(The combined December of	
HAA 2009 Annual Scientific Meeting, Adelaide, Australia, August 2009	Paraproteinemia and Coagulation Disorders	S McRae
AIMS 2009, Adelaide, Australia, October 2009	BloodSafe: SA Transfusion Practice Improvement Program	K Robinson
HAA 2009 Annual Scientific Meeting, Adelaide, Australia, August 2009	Pre-operative Iron Deficiency Anaemia	K Robinson
HAA 2009 Annual Scientific Meeting, Adelaide, Australia, August 2009	Consent for Transfusion	K Robinson
INTENSIVE CARE UNIT	1	T
ACCCN Institute of Continuing Education (ICE) conference Hobart, Australia, May 2009	Infection Control in the Intensive Care Unit	B Grealy
ACCCN Institute of Continuing Education (ICE) conference Hobart, Australia, May 2009	MRO Surveillance and Management in ICU	B Grealy

CONFERENCE TITLE & DATE	TITLE OF TALK/POSTER	ATTENDEE NAME
Australian Society of Anaesthetists National Scientific Congress, Darwin, Australia, September 2009	Obesity and OSD in the ICU setting	SL Peake
Australian Society of Anaesthetists National Scientific Congress Darwin, Australia, September 2009	The tale of two practices; Liberal and restrictive perioperative fluid management	SL Peake
Intensive Care Research Co-ordinators Interest Group (IRCIG) Meeting Noosa, Australia, March 2009	Applying for an Intensive Care Foundation Grant	SL Peake
MEDICINE, University of Adelaide Disciplin	e of	
Pharmacy Community Forum, Adelaide, Australia, August 2009	Inhaled corticosteroids and long-acting Beta2 Agonists in asthma and COPD	RE Ruffin
Sydney University Nutrition Research Founda- tion Committee on Nutrition For Older Australians, Sydney, Australia, June 2009	Under-nutrition and the Older Person. Ageing At Home: Nutrition and Other Aspects.	R Visvanathan (keynote speaker)
International Society for zinc Biology, Jerusalem, November 2009	Zinc and NF-KB, where inflammation meets apoptosis	PD Zalewski (co chair session)
NEUDOLOGY LINIT		
NEUROLOGY UNIT		
Poster Australian Stroke Constint Collaboration	Diamarkar discovery for transient is beaming attack and inchange	A Diukic M Lovis
Australian Stroke Genetics Collaboration, 6th Asia Pacific Conference Against Stroke & Stroke Society of Australasia Annual General Meeting, Cairns, Australia, September 2009	Biomarker discovery for transient ischaemic attack and ischaemic stroke	M Djukic, M Lewis, MA Hamilton-Bruce, SA Koblar
University of Adelaide Faculty of Health Sciences Postgraduate Research Expo, National Wine Centre of Australia, Adelaide, South Australia, September 2009	Biomarker discovery for transient ischaemic attack and ischaemic stroke	M Djukic, M Lewis, MA Hamilton-Bruce, SA Koblar
Centre for Stem Cell Research Annual Meeting, School of Molecular and Biomedical Science Symposium, Adelaide, Australia, November 2009	A biological interface for cortical microstimulation	K Ellis, M Lewis, D O'Carroll, SA Koblar
Centre for Stem Cell Research Annual Meeting, School of Molecular and Biomedical Science Symposium, Adelaide, Australia, November 2009	Investigation into the role of Npas4 in neurogenesis	T Klaric, M Lewis, M Whitelaw, SA Koblar
Centre for Stem Cell Research Annual Meeting, School of Molecular and Biomed- ical Science Symposium National Centre, December 2009	Investigation into the role of Npas4 in neurogenesis	T Klaric, M Lewis, M Whitelaw, SA Koblar
Centre for Stem Cell Research (CSCR) Annual Scientific Meeting. Adelaide, Australia, November 2009	The therapeutic role of dental pulp stem cells in improving functional outcome following ischaemic stroke	WK Leong, T Henshall, A Arthur, S Gronthos, M Lewis, SA Koblar
University of Adelaide School of Molecular and Biomedical Science Research Symposium, Adelaide, Australia, December 2009 Image competition (winner of Open Science category)	The therapeutic role of dental pulp stem cells in improving functional outcome following ischaemic stroke	WK Leong, T Henshall, A Arthur, S Gronthos, M Lewis, SA Koblar
Stroke Society of Australasia, Annual Scientific Meeting, Cairns, Australia, September 2009	Transient Ischaemic Attack (TIA) Knowledge in General Practice: a cross-sectional study of Western Adelaide general practitioners	ES Leong, MA Hamilton- Bruce, C Proce, SA Koblar
Platform		
The Queen Elizabeth Hospital Research Day, Adelaide, Australia, October 2009	Proteomic and genomic investigations in transient ischaemic attack – Pilot Study	M Djukic, M Lewis, MA Hamilton-Bruce, SA Koblar
University of Adelaide, Discipline of Physiology Seminar Adelaide, Australia, October 2009	A biological interface for cortical microstimulation	K Ellis
Victor Chang Developmental Biology Seminar Series, Bionomics Journal Club, Discipline of Genetics Seminar Series, November 2009		T Klaric, M Lewis, M Whitelaw, SA Koblar
The Queen Elizabeth Hospital Research Day, Adelaide, Australia, October 2009	Endothelial function in cerebral small vessel disease	A Lam, MA Hamilton-Bruce, EW Khoo, S Patel, SA Koblar, J Jannes

CONFERENCE TITLE & DATE	TITLE OF TALK/POSTER	ATTENDEE NAME
6th Asia Pacific Conference Against Stroke & 20th Stroke Society of Australasia Annual Meeting, Cairns, Queensland, September 2009	Endothelial function in cerebral small vessel disease	A Lam, MA Hamilton-Bruce, EW Khoo, S Patel, SA Koblar, J Jannes
The Queen Elizabeth Hospital Research Day, Adelaide, Australia, October 2009	The therapeutic role of dental pulp stem cells in improving functional outcome following ischaemic stroke	WK Leong, T Henshall, A Arthur, S Gronthos, M Lewis, SA Koblar
The Queen Elizabeth Hospital, Division of Medicine Medical Round, Adelaide, Australia, May 2009	Behavioural and Psychological Symptoms of Dementia: A Case Study from The Memory Unit	C Short, G Berce, K Boundy, J Phillips, E McGrath
NUCLEAR MEDICINE UNIT		
Australian and New Zealand Society of Nuclear Medicine Annual Scientific Meeting, Sydney, Australia, April 2009	Detection and correction of different detector sensitivities in multi- head SPECT gammacameras	L Barnden, B Crouch, D Badger
Australian and New Zealand Society of Nuclear Medicine Annual Scientific Meeting, Sydney, Australia, April 2009	A subtraction and 3D display program for the assessment of Pulmonary Embolism in SPECT V/Q scans	L Barnden, D Badger
Australian and New Zealand Society of Nuclear Medicine Annual Scientific Meeting, Sydney, Australia, April 2009	Improvements to the measurement of absolute cortical bloodflow and its application to multi-head cameras: A feasibility study	L Barnden
IACFS/ME; Reno, Nevada, USA, March 2009	The severity of Chronic Fatigue Syndrome correlates with changes in brain Magnetic Resonance (MR) images	L Barnden, B Crouch, R Burnet, A Mernone, R Kwiatek, P DelFante
Australian and New Zealand Society of Nuclear Medicine Annual Scientific Meeting, Sydney, Australia, April 2009	V/Q SPECT Scan With Quantitative Subtraction Using QONSUB	C Chew, L Barnden, S Unger, T Trinh
Australian and New Zealand Society of Nuclear Medicine Annual Scientific Meeting, Sydney, Australia, April 2009	A SPECT study of regional cerebral blood flow in mild cognitive impairment (MCI)	B Crouch, L Barnden, R Casse, N Liau
Australian and New Zealand Society of Nuclear Medicine Annual Scientific Meeting, Sydney, Australia, April 2009	Pulmonary vein stenosis after RF ablation diagnosed on a V/Q scan – a case study	R Edwards
Australian and New Zealand Society of Nuclear Medicine Annual Scientific Meeting, Sydney, Australia, April 2009	An I-123 Iodo-dexetimide SPECT Study of Acetylcholine Neuro- receptors in Post Traumatic Stress Disorder (PTSD)	E Goble, L Barnden, R Casse
Australian and New Zealand Society of Nuclear Medicine Annual Scientific Meeting, Sydney, Australia, April 2009	Incidental finding of breast cancer during myocardial perfusion imaging – a case study	D Maglica
Australian and New Zealand Society of Nuclear Medicine Annual Scientific Meeting, Sydney, Australia, April 2009	The value of myocardial perfusion cine review in the diagnosis of a liver cyst – a case study	G Pandos
NURSING RESEARCH		
Alcohol, Tobacco and other drugs: Nursing, Midwifery & Aboriginal Health Worker Practicum, Adelaide, Australia, August 2009	Triage: What do I do right now?	J Kenny
Country Health SA Allied Health Forum, Barossa, Australia, April 2009	Many varieties, great blend Multiplier Effect: A model for health professional development	J Giles, K Visentin
10th National Rural Health Conference, Cairns, Australia, April 2009	Building and supporting a diabetes education workforce	J Giles, K Visentin, P Phillips
Australian Diabetes Educators Association Annual Scientific Meeting, Adelaide, Australia, August 2009	Working together on nutrition advice	L Green, T Lehmann, T Bennett, J Giles
Australian Diabetes Educators Association Annual Scientific Meeting, Adelaide, Australia, August 2009	Waist circumference measurement: A comparison of technique and operator	M Hodgson, R Cox
6th International Meeting of Intensive Cardiac Care.Tel Aviv, Israel.October 2009.	ICCU nursing on the doorstep: the case for nursing input into triage of cardiac emergencies	AM Kucia
6th International Meeting of Intensive Cardiac Care.Tel Aviv, Israel.October 2009.	Takotsubo cardiomyopathy: What causes it? How do we diagnose it?	AM Kucia on behalf of the Cardiology Unit, Queen Elizabeth Hospital and Vascular Therapeutics Group

CONFERENCE TITLE & DATE	TITLE OF TALK/POSTER	ATTENDEE NAME
Australian Diabetes Educators Association Annual Scientific Meeting, Adelaide, Australia, August 2009	Caring for children and adolescents with type 1 diabetes in rural setting	K Visentin, M Lambert, J Giles
Health in Transition: Researching for the future. 4th International Conference on Community Health Nursing Research, Adelaide, Australia, August 2009	Diabetes in transition: A model for building local capacity	K Visentin, J Giles, P Phillips
Inaugural Nephrology Educators Symposium, Adelaide, Australia, July 2009	Presentation titled Workshops – old hat or still useful in providing professional development for nurses	C Wilden
57th Annual Scientific Meeting of the Cardiac Society of Australia and New Zealand, Sydney, Australia, August 2009	Can an Acute Cardiac Assessment Nurse reduce the time spent in ED for patients presenting with chest pain?	D Wright, AM Kucia
OTOLARYNGOLOGY, HEAD AND NECK SUR	GERY Department of	
Functional Endoscopic Sinus Surgery Course, Tokyo, Japan January 2009	Frontal Sinus Anatomy, Surgical approaches, Axillary Flap, Frontal recess, Vidian Neurectomy, Endoscopic Pituitary Surgery, CSF Leak Closure - "Bath Plug Technique "Modified Endoscopic Lothrop (MEL) Principles, Clivus, Sphenoid, ITF	PJ Wormald
5th Jakarta International FESS (JiFESS) Course & Workshop, Jakarta, March 2009	Frontal Sinus Anatomy, Surgical approaches, Axillary Flap and approached to the Frontal recess, Dacryocystorhinostomy Anatomy and technique, Vidian Neurectomy, Endoscopic Pituitary Surgery, Skull base repair, Modified Endoscopic Lothrop (MEL) Principles, Transnasal Endoscopic lintracranial Surgery	PJ Wormald
Australasian Society of Otolaryngology Head & Neck Surgery, Surfers Paradise, Australia, May 2009	Management of sinonasal polyposis, Controversies in frontal sinus surgery – Panel	PJ Wormald
Endoscopic Sinus Surgery Course, Winchester, United Kingdom, June 2009	Frontal Sinus Anatomy, Surgical approaches Axillary Flap, Frontal recess Dacryocystorhinostomy, Anatomy and technique, Vidian Neurectomy, Endoscopic Pituitary Surgery, CSF Leak Closure - "Bath Plug Technique," Modified Endoscopic Lothrop (MEL) Principles, Clivus, Sphenoid, ITF Panel Discussion	PJ Wormald
Skull Base Course, Brisbane, Australia, June 2009	Preparing the skull base for craniofacial resection (Lothrop, sphenoidotomies and ethmoidal ligation)	PJ Wormald
2009 Beijing Functional Endoscopic Sinus Surgery Course, Beijing, China, August 2009	Biofilms in chronic rhinosinusitis and healing and altering healing after sinus surgery, Endoscopic approaches for the Frontal Sinus, Modified Lothrop and Endoscopic anterior cranial fossa surgeries, Dissection demonstration; frontal sinus and modified Lothrop	PJ Wormald
3rd Asia Pacific Rhinology Innovative Leaders (APRIL) Forum on Advanced Functional Endoscopic Sinus Surgery & Endoscopic Sinus Surgery, Hong Kong, August 2009	Biofilms in Chronic Rhinosinusitis and healing and altering healing after sinus surgery, Endoscopic Sinus Surgery, Endoscopic approaches for the frontal sinus, modified Lothrop and Endoscopic Anterior Cranial Fossa Surgeries, Endoscopic Sinus Surgery Frontal sinus, Modified Lothrop, Infra-temporal Fossa; Anterior Cranial Fossa demonstration	PJ Wormald
Australasian Society of Clinical Immunology & Allergy - 20th Annual Scientific Meeting, Adelaide, Australia, September 2009	Bacterial biofilms and advanced surgery	PJ Wormald
55th American Rhinologic Society Meeting, San Diego USA, October 2009	5th Annual David W. Kennedy Lecture: Invited Guest speaker: The Frontal Sinus, How I do it, Session on Modified Endoscopic Lothrop Procedure or Draf III Procedure	PJ Wormald
American Academy of Otolaryngology Head & Neck Society Meeting, San Diego USA, October 2009	Biofilms in Chronic Sinusitis (Mini Seminar + Instructional Course), An Endoscopic Approach to Tumors of the Intra-temporal Fossa, Powered Endoscopic Dacryocystorhinostomy, Improving outcomes in Functional Endosocpic Sinus surgery, SS: tips from revision surgeons	PJ Wormald
Irish Otolaryngology Head & Neck Society 50th Anniversary, Cork, Ireland, October 2009	Honoured Guest to give the "Sir William Wilde Discourse": The frontal sinus. Invited Guest Speaker Rhinology Plenary Session: "The Philosophy of FESS" Recalcitrant CRS - why does well performed sinus surgery fail?	PJ Wormald
Neurosurgical Society of Australasia Workshop, Melbourne, Australia, October 2009	"Pituitary Surgery: Management of complex cases and recent developments workshop" - Invited Guest Speaker	PJ Wormald
12th Advanced Functional Endoscopic Sinus Surgery Course, Adelaide, Australia, November 2009	The anatomy and endoscopic approaches to the frontal recess, Review of CT scans with reconstruction of the anatomy of the frontal recess, Frontal recess dissection, Sphenopalatine artery ligation and Vidian neurectomy dissection, Dacryocystorhinostomy dissection, Modified endoscopic Lothrop dissection, Skull base dissection, Surgical field Panel discussion	PJ Wormald
Australasian Society of Otolaryngology Head & Neck Surgery, Surfers Paradise, Australia, May 2009	Biofilms in CRS: A FISH study	A Foreman

CONFERENCE TITLE & DATE	TITLE OF TALK/POSTER	ATTENDEE NAME
Australasian Society of Otolaryngology Head &	Biofilms and superantigens in CRS	A Foreman
Neck Surgery, Adeláide, Austrália, August 2009 American Rhinologic Society, San Diego, CA,	Characterisation of Bacterial and Fungal Biofilms in CRS	A Foreman
USA, October 2009 The Queen Elizabeth Hospital Research Day, Adelaide, Australia, October 2009	Do S. aureus biofilms contribute to Chronic Rhinosinusitis pathogenesis?	A Foreman
Surgical Research Society of Australia, Annual Scientific Meeting, Adelaide, Australia, November 2009	Do S. aureus biofilms contribute to Chronic Rhinosinusitis pathogenesis?	A Foreman
12th Advanced Functional Endoscopic Sinus Surgery Course, Adelaide, Australia, November 2009	Role of biofilms in Chronic Rhinosinusitis	A Foreman
Australasian Society of Otolaryngology Head & Neck Surgery, Surfers Paradise, Australia, May 2009	Impaired mucosal healing and infection associated with S.aureus following endoscopic sinus surgery	J Jervis-Bardy
European Operating Room Nurses Association, Copenhagen, Sweden, April 2009	Nurse Practitioner: Bridging the Gap Down Under	T Nicholls
13th Otorhinolaryngology Head & Neck Nurses Group (OHNNG) National Conference, Gold Coast, Australia, May 2009	Peri Operative Nurse Practitioner: ENT	T Nicholls
Medtronic ENT Perioperative Nurses Day, Melbourne, Australia, October 2009	Premiers Scholarship: USA	T Nicholls
12th Advanced Endoscopic Dissection Course, Adelaide, Australia, November 2009	FESS made Functional	T Nicholls
Australasian Society of Otolaryngology Head & Neck Surgery, Surfers Paradise, Australia, May 2009	Post Surgical Outcomes of Endoscopic Sinus Surgery, done for chronic Rhinosinusitis associated with Biofilms	D Singhal
American Rhinologic Society, San Diego, CA, USA, October 2009	Impact of Biofilms on outcomes of Endoscopic Sinus Surgery	D Singhal
Proteomics Forum Berlin, Germany, March - April 2009	Aberrant host mucin glycosylation patterns increase bacterial biofilm formation in respiratory disease	LW Tan
Annual Australian Society for Otolaryngology Head and Neck Surgery Conference, Gold Coast, Australia, May 2009	Is nasal lysozyme effective in killing fungi?	LW Tan
Qiagen, Hilden, Germany, April 2009	Increased susceptibility to bacterial biofilm associated respiratory diseases are influenced by aberrant glycosylation patterns of host mucin glycoproteins	LW Tan
Australasian Society of Otolaryngology Head & Neck Surgery, Surfers Paradise, Australia, May 2009	Efficacy of a novel chitosan gel on haemostasis following endoscopic sinus surgery in the sheep model of CRS	R Valentine
Australasian Society of Otolaryngology Head & Neck Surgery, Surfers Paradise, Australia, May 2009	Modulation of wound healing post endoscopic sinus surgery	R Valentine
55th American Rhinologic Society Meeting, San Diego USA, October 2009	Efficacy of a novel chitosan gel on haemostasis and wound healing following endoscopic sinus surgery	R Valentine
12th Advanced Functional Endoscopic Sinus Surgery Course, Adelaide, Australia, November 2009	Manipulation of wound healing	R Valentine
DSVCHIATDY University of Adelaide Dissipli	no of	
PSYCHIATRY, University of Adelaide Discipli Mt Lofty Psychiatry Symposium,	ne or Depression & Cardio-Vascular Disorder: Recent Work from	G Schrader
Adelaide, July 2009	South Australia	G JUHAVEI
RENAL UNIT		
Dialysis and Nephrology Transplant Workshop, Lorne, Australia, March 2009	Cutaneous squamous cell cancer after renal transplantation: management of immunosuppression	R Carroll
Roche Symposium Adelaide, Australia, Oct 2009	Squamous cell cancer after transplantation	R Carroll
Transplantation Society of Australia and New Zealand Meeting, Canberra, Australia, June 2009	High numbers of FOXP3+ T cells and poor lymphocyte proliferation identifies patients at risk of developing squamous cell carcinoma after renal transplantation	R Carroll
American Transplant Congress Boston, USA, May 2009	High Numbers of FOXP3+ T Cells and Poor Lymphocyte Proliferation Identifies Patients at High Risk of Developing Squamous Cell Cancer after Renal Transplantation	R Carroll

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Research Report 2009

CONFERENCE TITLE & DATE	TITLE OF TALK/POSTER	ATTENDEE NAME
Transplantation Society of Australia and New Zealand Meeting, Canberra, Australia, June 2009	Symposium lecture: The Highly Sensitised Patient	PT Coates
Roche National Transplant Symposium, Melbourne, Australia, July 2009	Clinical significance of anti-HLA antibodies in renal transplantation	PT Coates
Australian and New Zealand Society of Nephrology. Hobart, Australia, September 2009	Kidney transplant outcomes among the Maori and pacific peoples of New Zealand	M Collins
Annual CITR Meeting Miami Florida, USA, March 2009	The current status of the Adelaide Islet Transplantation program	C Drogemuller
Transplantation Society of Australia and New Zealand Meeting, Canberra, Australia, June 2009	Variability of zinc transporter gene expression in isolated human islets in particular ZIP14 and the β-cell specific ZnT8	C Drogemuller
International Pancreas and Islet Transplantation Association Venice, Italy, October 2009	Transcriptome analysis of isolated human pancreatic islets expression profiles of zinc transporter genes in particular genes in particular ZnT8 and ZIP14, critical islet maker genes and glucose metabolic gene	C Drogemuller
Australian Society for Medical Research Adelaide, Australia, June 2009	Adenovirus-Mediated Transduction of Pancreatic Islets using Insulinlike Growth Factor-II (IGF-II) to Prevent Apoptosis	A Hughes
Transplantation Society of Australia and New Zealand Meeting, Canberra, Australia, June 2009	Adenovirus-mediated transduction of pancreatic islets using insulin- like growth factor-II to prevent apoptosis	A Hughes
Australian Diabetes Society (ADS) Meeting, Adelaide, Australia, August 2009	Transgenic expression of insulin-like growth factor-II (IGF-II) in pancreatic islets to prevent apoptosis	
Australasian Society for Immunology, Adelaide, Australia, September 2009	Investigation of cytokine-induced early apoptosis in isolated islets of Langerhans	A Hughes
The University of Oxford, Weatherall Institute, Oxford, UK, October 2009	Optimal Delivery of Therapeutic Genes to Pancreatic Islets	A Hughes
International Pancreas and Islet Transplantation Association Venice, Italy, October 2009	Transgenic expression of insulin-growth factor-II (IGF-II) in pancreatic islets to prevent apoptosis	A Hughes
Transplantation Society of Australia and New Zealand Meeting, Canberra, Australia, June 2009	Characterisation of rat endothelial progenitor cells (EPC) as a novel cellular therapy to enhance the engraftment of pancreatic islets	C Jessup
International Pancreas and Islet Transplantation Association Venice, Italy, October 2009	Co-transplantation of rat endothelial progenitor cells to enhance the engraftment of pancreatic islets	C Jessup
Australian Diabetes Society (ADS) Meeting, Adelaide, Australia, August 2009	Co-transplantation of endothelial progenitor cells to enhance the engraftment of pancreatic islets	C Jessup
1st International Conference on Immune Tolerance, Boston, USA, October 2009	Antigen presenting T-cells acquire immunomodulatory properties by contact dependent membrane fragment transfer from genetically modified dendritic cells expressing HLA-G	R Krishnan
Transplantation Society of Australia and New Zealand Meeting, Canberra, Australia, June 2009	Generation of tolerogenic dendritic cells by the ectopic expression of the transcription factor FoxP3 in dendritic cells	R Krishnan
Transplantation Society of Australia and New Zealand Meeting, Canberra, Australia, June 2009	Comparative structural and phonotypical characterisation of new world primate and human pancreatic islets	D Mohanasundaram
International Pancreas and Islet Transplantation Association Venice, Italy, October 2009	Common Marmoset monkeys – A new world primate model for diabetic research – a comparison with human pancreatic islets	D Mohanasundaram
Annual Australian islet study group Melbourne, Australia, November 2009	A comparative study of Zinc and glucose transporters of marmoset and human islets	D Mohanasundaram
Transplantation Society of Australia and New Zealand Meeting, Canberra, Australia, June 2009	Invited Plenary Lecture: Organ donation in Australia	S McDonald
Transplantation Society of Australia and New Zealand Meeting, Canberra, Australia, June 2009	Living kidney donation from indigenous Australians of the Northern Territory, a poor outcome for both donor and recipient	N Rogers
Transplantation Society of Australia and New Zealand Meeting, Canberra, Australia, June 2009	Parameters of operational tolerance following adult living donor renal transplantation	N Rogers
Australian and New Zealand Society of Nephrology, Hobart, Australia, September 2009	'Fast-DC' protocol in combination with interferon-γ generates clinically applicable tolerogenic dendritic cells (TOL-DC)	D Rojas
International Pancreas and International Pancreas and Islet Transplantation Association Venice, Italy, October 2009	Rapid generation of tolerogenic dendritic cells (TOL-DC) for immunomodulation in clinical islet transplantation	D Rojas

TQEHresearch Research Report 2009

99

CONFERENCE TITLE & DATE	TITLE OF TALK/POSTER	ATTENDEE NAME
International Pancreas and Islet Transplantation Association Venice, Italy, October 2009	Adenoviral mediated expression of the immunomodulatory molecule PD-L2 in human islets maintains stable in vitro islet function	D Rojas
Australian and New Zealand Society of Nephrology, Hobart, Australia, September 2009	Kidney Replacement Therapies are Associated with Increased Rates of Hospital Separation and Mortality for Acute Cardiac Events	S Sen
Australian and New Zealand Society Of Nephrology, Hobart, Australia, September 2009	In vitro Endothelial Cell Tube-Forming Capacity Reduced By Transplant Sera, but Migration Increased by Haemodialysis	S Sen
Transplantation Society of Australia and New Zealand Meeting, Canberra, Australia, June 2009	A Novel Protocol for the Expansion of CD133+ Human Endothelial Progenitor Cells in EGM-2 Plus Cytokines	S Sen
Transplantation Society of Australia and New Zealand Meeting, Canberra, Australia, June 2009	Renal Transplantation Decreases Rates of Hospital Separation for Both Acute Cardiac Events and Cardiac Failure Compared to Dialysis	S Sen
Australian and New Zealand Society of Nephrology, Hobart, Australia, September 2009	Bone parameter monitoring pre- and post-renal transplantation	R Yu
RESPIRATORY MEDICINE UNIT		T
	In whose interest are we managing this incident?	P Smith
9th Annual Adverse Events Management Conference, Melbourne, Australia, April 2009	In whose interest are we managing this incident?	B Smith
TSANZ: ASM: Darwin, Australia, March 2009	Closing the Gap between Evidence & Practice	B Smith
Australian Practice Nurses Association Practice Nurse Education Conference, Adelaide, Australia, September 2009	Performing & Interpreting Spirometry	B Smith, D Keatley
RHEUMATOLOGY UNIT		
	Dharmantala an Talana alisina in Danal Aratalia (a atau ana atatian)	C.D at T.Kalli.
ACR/ARHP Annual Scientific Meeting, Philadel- phia, USA, October 2009	Rheumatology Telemedicine in Rural Australia (poster presentation)	S Burnet, T Kelly, A Marrinan, P Donohoe, T Wade
10th International Symposium on Sjögren's syndrome, Brest, France, October 2009	Genes associated with Systemic Lupus Erythematosus (SLE) that are shared with Sjögren's Syndrome (SS) (poster presentation)	B Cobb, F Yiping, R Jonsson, A Bolstad, J Brun, M Rischmueller, S Lester, T Witte, G Illei, M Brennan, S Bowman, K Moser, J Harley, A Sawalha
10th International Symposium on Sjögren's syndrome, Brest, France, October 2009	Possible association of Sjögren's Syndrome (SS) with THRB, the thyroid hormone receptor, beta (poster presentation)	B Cobb, F Yiping, R Jonsson, A Bolstad, J Brun, M Rischmueller, S Lester, T Witte, G Illei, M Brennan, S Bowman, K Moser, J Harley, A Sawalha
10th International Symposium on Sjögren's syndrome, Brest, France, October 2009	Candidate genes for Sjögren's syndrome (SS) susceptibility can be identified by genome wide scans (GWAS) with pooled DNA (oral presentation)	B Cobb, F Yiping, R Jonsson, A Bolstad, J Brun, M Rischmueller, S Lester, T Witte, G Illei, M Brennan, S Bowman, K Moser, J Harley, A Sawalha
ARA & NZRA in conjunction with RHPA (Australia) & NZHPR Combined Conference, Wellington, NZ, May 2009	Risk of cancer in patients with biopsy-proven giant cell arteritis: a population-based cohort study (oral presentation)	C Hill, A Cole, M Rischmueller, T Dodd, M Coleman, G Tucker
ARA & NZRA in conjunction with RHPA (Australia) & NZHPR Combined Conference, Wellington, NZ, May 2009	Effect of socio-economic status (SES) and musculoskeletal pain in Australia (poster presentation)	C Hill, T Gill, E Shanahan, R Adams, A Taylor
ARA & NZRA in conjunction with RHPA (Australia) & NZHPR Combined Conference, Wellington, NZ, May 2009	Steroid-sparing drug treatments for giant cell arteritis: a systematic review (poster presentation)	C Hill, A Cole, S Lester, S Whittle
ARA & NZRA in conjunction with RHPA (Australia) & NZHPR Combined Conference, Wellington, NZ, May 2009	Survival in Scleroderma (oral presentation)	P Hissaria, S Lester, C Hill, M Ahern, M Smith, J Walker, P Roberts-Thomson

TQEHresearch

Research Report 2009

CONFERENCE TITLE & DATE	TITLE OF TALK/POSTER	ATTENDEE NAME
Australian Rheumatology Association (SA Branch) Annual Scientific and Clinical Meeting, Adelaide, Australia, Nov 2009	TNF inhibitors and risk of serious infection in Rheumatoid Arthritis (oral presentation)	V Katikireddi, S Whittle, C Hill
ARA & NZRA in conjunction with RHPA (Australia) & NZHPR Combined Conference, Wellington, NZ, May 2009	Functional polymorphisms of the P2X7 gene influence susceptibility to Ro/La autoantibody-positive primary Sjögren's syndromes (oral presentation)	S Lester, K Skarratt, B Gu, S Downie-Doyle, J Wiley, M Rischmueller
ARA & NZRA in conjunction with RHPA (Australia) & NZHPR Combined Conference, Wellington, NZ, May 2009	The HLA and autoantibody associations of a large cohort of patients with biopsy proven idiopathic inflammatory myosisits (oral presentation)	V Limaye, S Lester, S Cox, P Bardy, F Roberts-Thomson
ARA & NZRA in conjunction with RHPA (Australia) & NZHPR Combined Conference, Wellington, NZ, May 2009	An analysis of the Bohan and Peter criteria among patients with biopsy proven inflammatory myositis (oral presentation)	V Limaye, S Lester, S Cox, P Roberts-Thomson, P Blumbergs
Australian Rheumatology Association (SA Branch) Annual Scientific and Clinical Meeting, Adelaide, Australia, November 2009	Normative Hand Grip Strength; The North West Adelaide Health Study (oral presentation)	N Massey-Westropp, T Gill, A Taylor, C Hill
Australian Rheumatology Association (SA Branch) Annual Scientific and Clinical Meeting, Adelaide, Australia, November 2009	Suprascapular nerve block – is it safe and what do patients think of it? (oral presentation)	E Shanahan, K Shanahan, C Hill
ARA & NZRA in conjunction with RHPA (Australia) & NZHPR Combined Conference, Wellington, NZ, May 2009	Screening for pulmonary hypertension and interstitial lung disease in systemic sclerosis using the Australian Scleroderma Screening Program (ASSP) Database (poster presentation)	W Stevens, J Zochling, M Chan, K Tymms, E Gabbay, J Sahhar, A Sturgess, C Hill, P Youssef, P Nash, S Proudman
The Thoracic Society of Australia & New Zealand and the Australian & New Zealand Society of Respiratory Science, Annual Scientific Meetings, Darwin, Australia, April 2009	Assessment of cardiopulmonary complications of systemic sclerosis using the Australian Scleroderma Screening Program (ASS) Database	W Stevens, J Byron, F Kermeen, J Zochling, K Tymms, E Gabbay, A Sturgess, C Hill, P Youssef, P Nash, J Sahhar, J Roddy, S Proudman on behalf of ASIG
ARA & NZRA in conjunction with RHPA (Australia) & NZHPR Combined Conference, Wellington, NZ, May 2009	DAS28 and active foot synovitis: Does DAS28 underestimate disease activity in rheumatoid arthritis? (oral presentation)	M Wechalekar, S Lester, S Proudman, L Cleland, S Whittle, M Rischmueller, C Hill
ARA & NZRA in conjunction with RHPA (Australia) & NZHPR Combined Conference, Wellington, NZ, May 2009	Lex Parsimoniae vs Lateral Thinking (oral presentation)	M Wechalekar
Australian Rheumatology Association (SA Branch) Annual Scientific and Clinical Meeting, Adelaide, Australia, November 2009	Comparison of DAS28 derived from ESR or CRP in patients with Rheumatoid Arthritis (oral presentation)	M Wechalekar, E Ang, S Lester, S Burnet, M Rischmueller, S Whittle, L Cleland, S Proudman, C Hill
ARA & NZRA in conjunction with RHPA (Australia) & NZHPR Combined Conference, Wellington, NZ, May 2009	Steroid-sparing drug treatments for polymyalgia rheumatica: a systematic review (poster presentation)	S Whittle, A Cole, S Lester, C Hill
SURGERY, University of Adelaide Discipline		Inchill Folia
European Society for Vascular Surgery Annual Scientific Meeting, Norway, September 2009	Should we develop a core International Curriculum for Vascular and Endovascular Surgery?	R Fitridge, F Quigley, M Vicaretti
General Surgeons Australia Trainees Day, Brisbane, Australia, May 2009	Assessment and Principles of Management of the Diabetic Foot	R Fitridge
Lyell McEwin Health Service Diabetes Day, Adelaide, Australia, November 2009	Overview of Assessment and Management of the Diabetic Foot	R Fitridge
Management of the High Risk Diabetic Foot (Workshop), Alice Springs, Australia, May 2009	The Diabetic Foot in Australasia	R Fitridge
Management of the High Risk Diabetic Foot (Workshop), Alice Springs, Australia, May 2009	Clinical and Vascular Assessment of the Diabetic Foot	R Fitridge
Management of the High Risk Diabetic Foot (Workshop), Alice Springs, Australia, May 2009	Overview of Managing the Diabetic Foot	R Fitridge, M Hamilton, S Jones
Management of the High Risk Diabetic Foot (Workshop), Alice Springs, Australia, May 2009	Revascularisation of the Diabetic Foot	R Fitridge, M Hamilton
Provincial Surgeons of Australia Annual Scientific Conference, Alice Springs, Australia, July 2009	The Diabetic Foot in Australasia	R Fitridge
Provincial Surgeons of Australia Annual Scientific Conference, Alice Springs, Australia, July 2009	Calf Vein Thrombosis	R Fitridge, S McRae, N Blest

CONFERENCE TITLE & DATE	TITLE OF TALK/POSTER	ATTENDEE NAME
Provincial Surgeons of Australia Annual Scientific Conference, Alice Springs, Australia, July 2009	Perioperative Management of Anticoagulants and Anti-platelet Agents	R Fitridge, S McRae, C Gibb, K Galuszka
Provincial Surgeons of Australia Annual Scientific Conference, Alice Springs, Australia, July 2009	Vascular Assessment of the Diabetic Foot	R Fitridge
Provincial Surgeons of Australia Annual Scientific Conference, Alice Springs, Australia, July 2009	Revascularisation of the Diabetic Foot	R Fitridge, M Hamilton
Royal Australian College of Surgeons Annual Scientific Congress, Brisbane, Australia, May 2009	A multi-centre trial to assess the ERA model: Predicting outcomes after EVAR	R Fitridge
Royal Australian College of Surgeons Annual Scientific Congress, Brisbane, Australia, May 2009	How do we train the future Vascular Specialist?	R Fitridge
European Society of Cataract and Refractive Surgeons Annual Congress, Barcelona, Spain, September 2009	Managing astigmatism with toric implants and LRIs in cataract and refractive surgery: didactic course	M Goggin
The 24th Congress of the Asia-Pacific Academy of Ophthalmology, Bali, May 2009	Reproducibility in keratometry	M Goggin
Annual Paediatric Surgical Update, Women's and Children's Hospital, Adelaide, Australia, October 2009	Masters Degree in Minimally Invasive Surgery	P Hewett
International Surgical Week, Adelaide, Australia, September 2009	How to mobilize the splenic flexure laparoscopically	P Hewett
HTAi Policy Forum 2009 San Francisco, USA, February 2009	HTA for optimization of technology utilization. What is optimal use of technology: the clinician's experience	G Maddern
International meeting for HTA-emerging countries, Ankara, Turkey, March 2009	Health technology assessment: the Australian experience	G Maddern
International meeting for HTA-emerging countries, Ankara, Turkey, March 2009	Governance and health technology assessment	G Maddern
International meeting for HTA-emerging countries, Ankara, Turkey, March 2009	Coordinating HTA practices worldwide	G Maddern
Health Technology Assessment Principles and Practices, Kuching, Malaysia, April 2009	Introduction to evidence based health care and HTA	G Maddern
Health Technology Assessment Principles and Practices, Kuching, Malaysia, April 2009	Generalising and transferability of HTA	G Maddern
Health Technology Assessment Principles and Practices, Kuching, Malaysia, April 2009	Knowledge transfer: challenges in putting HTA into practice	G Maddern
Health Technology Assessment Principles and Practices, Kuching, Malaysia, April 2009	Health technology assessment in hospital and district general hospital settings	G Maddern
Health Technology Assessment Principles and Practices, Kuching, Malaysia, April 2009	Model of implementation of HTA activities: the Australian experience	G Maddern
Health Technology Assessment Principles and Practices, Kuching, Malaysia, April 2009	Meeting decision makers' needs	G Maddern
Serdang Hospital, Malaysia, April 2009	How to present your work at a meeting and how to get your paper published	G Maddern
Basil Hetzel Institute for Medical Research Seminar Series, The Queen Elizabeth Hospital, April 2009	Development and assessment of novel surgical technologies and their introduction into the Australian healthcare system	G Maddern
South Australian Nurse Practitioners Group, June 2009	Medical workforce solution: Delegation or substitution?	G Maddern
Medtronic Symposium, 6th Annual Meeting HTAi, Suntec Convention Centre, Singapore, June 2009	Rapid HTA – Inventory of current methods and practice around the globe.	G Maddern
Plenary Session, 6th Annual Meeting HTAi, Suntec Convention Centre, Singapore, June 2009	Coordination of HTA activities among established HTA agencies and programs	G Maddern
Medical Insurance Group Australia, Adelaide- 1 August, Sydney-22 August, Melbourne-12 September, Barossa Valley-10 October 2009, Adelaide-21 November, Coonawarra-28 November 2009	Hypothetical: Treating adolescents – A challenge in confidentiality and consent	G Maddern
International Surgical Week, Adelaide, Australia, September 2009	Stage 4 colon cancer: How much liver resection is too much?	G Maddern

TQEHresearch

Research Report 2009

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33rd Annual Australasian Society of Aesthetic Plastic Surgery Conference 2009 Sydney, Australia, October 2009	Audit and clinical governance satisfying the RACS CPD requirements in private practice	G Maddern
The Australian Council of Healthcare Standards, Ballarat-5 October, Adelaide- 7 October, Sydney-2 November, Gold Coast, Australia, 9 November 2009	Hypothetical: Working with consumers (Facilitator)	G Maddern
The Australian Council of Healthcare Standards, Ballarat-5 October, Adelaide- 7 October, Sydney-2 November, Gold Coast Australia, 9 November 2009	Hypothetical: Multidisciplinary teamwork for Safety (Facilitator)	G Maddern
Surgical innovation: Issues around evaluation, education, accreditation and reimbursement American College of Surgeons 95th Annual Clinical Congress, Chicago, Illinois, USA, October 2009	The Australian solution	G Maddern
Macquarie University, Sydney, Australia, November 2009	Hypothetical: The cutting edge of innovative treatments: the hazards of progress (Panel Member)	G Maddern
Chinese colorectal society meeting, China, February 2009	Single incision laparoscopic assisted colectomy	N Rieger
ASCO 2009 Gastrointestinal Cancers Symposium, San Francisco, USA, 2009	Impact of the national bowel cancer screening program in Australia (NBCSP) utilising faecal occult blood test (FOBT) screening on the diagnosis of colorectal cancer	N Rieger, S Ananda, S McLaughlin, F Chen, I Hayes, A Hunter, I Skinner, M Steel, I Jones, PF Gibbs
Advanced trainee gastroenterology day, Repatriation General Hospital, Adelaide, Australia, June 2009	A surgeon's approach to rectal cancer	N Rieger
Continence in the Country Symposium, Berri Hospital, Australia, August 2009	Faecal incontinence	N Rieger
International Surgical Week, Adelaide, Australia, September 2009	Single incision laparoscopic (SIL) assisted right colectomy using standard laparoscopic instrumentation. (Video Presentation)	N Rieger
Adelaide prostate cancer support group, Adelaide, Australia, September 2009	The bowel and prostate cancer	N Rieger
Calvary Hospital Nurse Education evening, Adelaide, Australia, October 2009	SILS / NOTES/ Bowel preparation	N Rieger
Continence Foundation of Australia 18th National Conference on Incontinence, Adelaide, Australia, November 2009	Perineal Workshop - Anatomy, Disruption and Outcomes Post Childbirth	N Rieger
British Society of Gastroenterology Annual General Meeting, Glasgow, Scotland, March 2009	Barrier breakdown in ulcerative colitis: the case of nitrosothiols impairing colonocytes	WEW Roediger, AG Cummins, P Cowled
From Menace to Marvel" Nitric oxide in Health and Disease", University of Hertfordshire, The Biopark, Welwyn Garden City, United Kingdom, March 2009	Nitric oxide in intestinal barrier breakdown	WEW Roediger
John Radcliffe Hospital, Gastroenterology Unit, Oxford, UK, March 2009	Crohn's disease as an infection	WEW Roediger
General Surgeons Australia (GSA) Trainee's Day, Adelaide, Australia, September 2009	Demystifying the FRACS Part II Exam	D Walsh
International Association of Endocrine Surgeons postgraduate Meeting, Adelaide, Australia, September 2009	Chair: Endocrine surgery update	D Walsh
International Surgical Week 2009, Adelaide, Australia, September 2009	Chair: Tailor-made breast surgery	D Walsh
SA Breast Endocrine Surgical Journal Club, Adelaide, Australia, Sept 2009	Highlights from the ANZBCTG meeting 2009	D Walsh
SA Familial Cancer Genetics Service and Women's and Children's Hospital, Adelaide, Australia, July 2009	Prophylactic surgery for BRCA carriers	D Walsh
TQEH Postgraduate Nurse Study Day, Adelaide, Australia, July 2009	Targeted therapy in breast cancer	D Walsh

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ORTHOPAEDICS AND TRAUMA		•
ANZORS (Aust and NZ Orthopaedic Research Society), Adelaide, Australia, October 2009	A Rationalisation of Outcome Scores for Low Back: the ODI 2.0 and the LBOS	V Eranki, A Fagan
Sherbrook Orthopaedic Meeting, Quebec, Canada, September 2009	Cognitive Decline Following THR, TKR and Navigated TKR	P Lewis
Sherbrook Orthopaedic Meeting, Quebec, Canada, September 2009	The Avon Knee	P Lewis
Sherbrook Orthopaedic Meeting, Quebec, Canada, September 2009	Operative Treatment of Gluteal Tendon Repair	P Lewis
Sherbrook Orthopaedic Meeting, Quebec, Canada, September 2009	Re-operations after Oxford Uni Replacement	P Lewis
Australian Orthopaedic Association National Meeting, Noosa, Australia, May 2009	Operative Treatment of Gluteal Tendon Repair	P Lewis
Australian Orthopaedic Association SA Branch, Adelaide, Australia, August 2009	Abductor Dysfunction after Hip Replacement	P Lewis
Australian Orthopaedic Association National Meeting, Noosa, Australia, May 2009	Abductor Dysfunction after Hip Replacement	P Lewis
THERAPEUTICS RESEARCH CENTRE	1	·
European Pharmaceutical Sciences Meeting: Pharmacokinetics: Spearheading advances and delivering the science' (on the occasion of Professor Malcolm Rowland's 70th birthday) London, UK, October 2009	Structure - Transport Relationships	MS Roberts
University of Bath, UK, October 2009	Skin, the final frontier in drug delivery	MS Roberts
12th Annual Force Health Protection Conference, Albuquerque, New Mexico, USA, August 2009	Penetration of nanoparticles through human skin?	MS Roberts
International Skin Pharmacology Conference, Boston, USA August 2009	New perspectives in solute structure - skin penetration relationships	MS Roberts
36th Annual Meeting And Exposition Of The Controlled Release Society, Copenhagen, Denmark, July 2009	Enhancement Strategies in Skin Penetration of Solutes and Nanoparticles: Species Differences	MS Roberts
4th Workshop on Advanced Multiphoton and Fluorescence Lifetime Imaging Techniques FLIM 2009, University of Saarland, Saarbrücken, Germany, June 2009	Penetration of nanoengineered systems into human epithelia	MS Roberts
12th Canadian Society for Pharmaceutical Sciences (CSPS) Annual Symposium, Toronto, Canada June 2009	Recent Developments in Transdermal Drug Development	MS Roberts
The Australian College of Dermatologists 42nd Annual Scientific Meeting, Gold Coast, Australia, May 2009	Nanotechnology in suncreens – is it safe?	MS Roberts
Australian Government, Department of Health and Ageing, Therapeutic Goods Administration Meeting: Nanotechnology Training Program Discovery Centre, CSIRO, Canberra, Australia, May 2009	Introduction to pharmacokinetics: absorption, clearance, volume of distribution, half-life, protein binding, bioavailability	MS Roberts
Australian Government, Department of Health and Ageing, Therapeutic Goods Administration Meeting: Nanotechnology Training Program Discovery Centre, CSIRO, Canberra, Australia, May 2009	Routes of exposure to Nanoparticles	MS Roberts, YTM Wu





"A continuing generous level of funding from the TQEH Research Foundation has allowed seven continuing higher degree candidates to be supported in 2009."

The Basil Hetzel Institute Policy Committee

Established in 1996, the Clinical Development Research Centre, now the Basil Hetzel Institute (BHI) Policy Committee's role is to provide strategic advice for the running of the BHI and to optimise the available support for research programs across The Queen Elizabeth Hospital (TOEH).

The Committee is comprised of senior representatives from:

- the two universities with whom the hospital is affiliated, Adelaide University and the University of South Australia;
- University of Adelaide academic heads of departments at TQEH (Medicine and Surgery);
- Allied Health
- Chair, Strategic Research Directions Working Group
- BHI Facility Manager and
- the scientific community

Professor Guy Maddern was reappointed to the position of Director of Research in February 2005 for a five-year term. This leadership position has been critical to furthering the aims of research excellence and enhancing the research reputation of TQEH.

Several sub–committees assist the BHI Policy Committee as required, notably the:

- Research Day Organising Committee, chaired by Dr Prue Cowled, University of Adelaide Discipline of Surgery, in the planning and running of the annual Research Day event.
- Scholarship Selection Committee, chaired by Professor Maddern, in awarding a range of scholarships funded by TQEH Research Foundation.
- BHI Management Committee, chaired by A/ Professor Ray Morris, Clinical Pharmacology Unit, in managing the new research facility.

TQEH Research Secretariat undertakes a range of activities to assist the Director of Research in supporting, fostering and administering quality research activity across TQEH. Gwenda Graves and Bronwyn Lenton man the Secretariat.

Research Training

The BHI Policy Committee aims to support the research capacity within basic and clinical areas through its strategy of providing a number of scholarships at postgraduate, Honours and vacation levels.

Research training promotion

In 2009 research training opportunities and Scholarship support were actively promoted through the hospital's research Internet site with links to key university research training sites.

Strategy for 2009

The goals of the research support strategy were to provide up to:

- 7 TQEH Research Foundation Postgraduate Research Scholarships
- 10 TQEH Research Foundation Honours Scholarships
- 8 TQEH Research Foundation Vacation Scholarships

TQEH Research Foundation Vacation Research Scholarships

Eight placements offered in TQEH research settings over the 2008/2009 vacation were generously funded through the Research Foundation and provided scholars with the opportunity to gain valuable research experience in a clinical/laboratory environment.

TQEH Research Foundation Honours Research Scholarships

Honours Scholarships continued to be offered at TQEH in 2009. Nine Scholarship recipients undertook projects across a range of Departments including Clinical Pharmacology, Transplantation-Immunology, Surgery, Neurology and Cardiology. Higher Degrees

In 2009 sixty scholars were undertaking research towards Higher Degrees at TQEH. A continuing generous level of funding from the TQEH Research Foundation has allowed seven continuing higher degree candidates to be supported in 2009. While seven TQEH Research Foundation Scholarships were available to support students commencing in 2009, only three were awarded as other applicants were successful in obtaining externally funded Scholarships, (APA, and NHMRC).

In 2009 TQEH Research Foundation Scholarships provide for stipends which match the Australian Postgraduate Award (APA) rate, as well as a maintenance allowance for each student to assist the Department in which they are undertaking the research work. From 2010 Scholarships will no longer be

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Research Report 2009



centrally funded as in the past, but will be funded via the TQEH Research Foundation Program grants (commenced 2009), thereby devolving primary responsibility for selection of research students to research groups.

A record number of APA students (4) commencing research at TQEH in 2009 were awarded TQEH Research Foundation Top Up Scholarships, valued at \$5,000 each. Other higher degree students at TQEH have scholarship support from a range of funding bodies, including NHMRC, the University of Adelaide (International scholarships, APA, and Faculty 'Divisional' scholarships) and the non-profit sector including Kidney Health Australia and Freemasons.

Research Day 2009

Research Day 2009 was held for the first time in our brand new research building! Research Day has been held for 15 years now and continues to be recognized as a significant annual event in the research calendar at TQEH. The long-established purpose of the Day is to provide an opportunity for students and those "in training" to practice and develop presentation skills under conditions that are typical of most professional society congresses. With this experience, it is expected that research quality from TQEH will benefit as researchers deliver their work to national or international congresses. Prizes are awarded in a number of categories for the best presentation and competition is fierce! This year, the Committee was delighted to receive a record 42 Abstracts, a reflection of the great research ethos of our new building! However, because of the limited time available for oral presentations, selection was very competitive and much high quality research could not be included in the final oral programme. A number of researchers chose to present their work in poster format and compete for the Poster Prize.

The Plenary Lecture presented by Professor David Vaux of La Trobe University was enthusiastically received. In a most entertaining manner, Professor Vaux challenged our knowledge of data analysis and statistics, providing a series of "take home messages" to help interpret data in published papers and to help with preparation of manuscripts. All those attending agreed that they learnt some valuable lessons!

Sponsorship for the Day was obtained from many sources, both University and corporate. However our major sponsor for Research Day has for many years been The Queen Elizabeth Hospital Research Foundation and we are very grateful for this long term support. This year TQEH Research Foundation sponsored five presentation prizes and we look forward to the Foundation's continued support. The Day was our most successful yet, and our winners are identified in the Award section of the report.

Dr Prue Cowled, Chair, Research Day Organising Committee, 2009 The Institute Management
Committee
(Pictured rear left to right):
Dr Prue Cowled, Dr Yuliy
Chirkov, A/Prof Ray Morris,
Dr Peter Zalewski,
Dr Lor Wai Tan
(Seated left to right):
A/Prof Peter Coyle,
Ms Sandy Pickering,
Dr Andrew Holmes,
Ms Gwenda Graves

Absent: Dr Petra Neufing, Mr Matthew Smith, Ms Kathryn Hudson, Ms Darling Rojas. "The service is well used by staff and students, with over 50 reports being produced during the year, plus many other shorter consultations requiring lesser assistance."

Statistical Support Service, TQEH

The Statistical Support Service, jointly funded through the Basil Hetzel Institute and the Faculty of Health Sciences at the University of Adelaide, provides 10 hours per week statistical consultancy to staff and students at the BHI and TQEH more generally.

The service is well used by staff and students, with over 50 reports being produced during the year, plus many other shorter consultations requiring lesser assistance.

The range of services has included

- Assisting with the design of healthrelated research;
- Power and sample size calculations;
- Advising research staff and students on statistical aspects of research programs;
- Providing advice about cleaning and maintaining datasets and preparing data for analysis;
- Providing advice about data analysis and manuscript preparation;
- Undertaking analysis of data as part of research projects and programs.

Staff

JBF Field BSc(Hons) PhD AStat

2009 Papers published with J Field as co author:

Chapman IM, Visvanathan R, Hammond AJ, Morley JE, Field JBF, Tai K, Belobrajdic DP, Chen RYT, Horowitz M. Effect of testosterone and a nutritional supplement, alone and in combination of hospital admissions in undernourished older men and women. *Amer J Clin Nutr.* 2009; 89:880-9.

Beule A, Athanasiadis T, Athanasiadis E, Field J, Wormald PJ. Efficacy of different techniques of sinonasal irrigation after modified Lothrop procedure. *Am J Rhinol Allergy*. 2009 Jan-Feb; 23(1):85-90.

Thwin M, Weitzel E, McMains KC, Athanasiadis T, Psaltis A, Field J, Wormald PJ. Validating the use of report-derived Lund-McKay scores *Am J Rhinol Allergy.* 2009 Jan-Feb; 23(1):33-5.

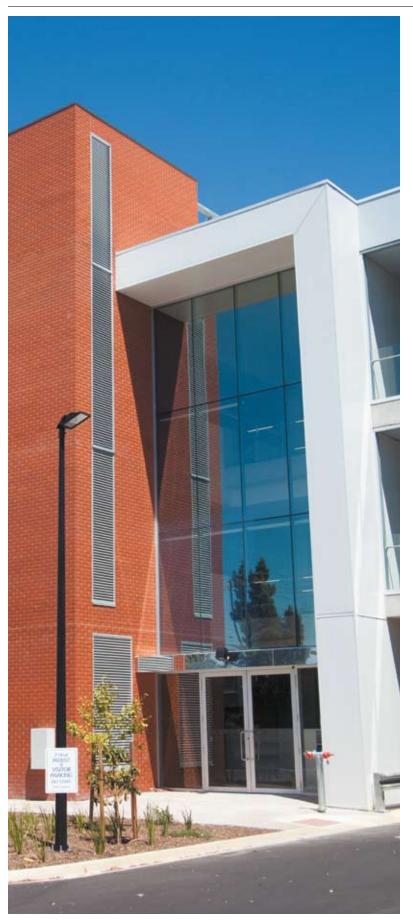
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Basil Hetzel Institute (BHI) Policy Committee



Current Members, December 2009

Prof Guy Maddern Prof Richard Ruffin

Prof Justin Beilby (proxy - Prof Andrew Somogyi)

Mrs Jackie Wood

Prof Pat Buckley

Ms Diana Brown

Dr Jenny Kennedy

Dr Prue Cowled

Dr Ravi Krishnan

A/Prof Richard D'Andrea

A/Prof Ray Morris

Mr Paul Flynn

Ms Kathryn Hudson

A/Prof Simon Koblar

Ex-officio

A/Prof Robert Adams

Executive Support

Ms Gwenda Graves

Basil Hetzel Management Committee Current members, December 2009

The Institute Level	Representative	
Ground Level	Mrs Sandy Pickering	
Level 1	Dr Prue Cowled	
	Dr Lor Wai Tan	
	Dr Petra Neufing	
Level 2	Dr Peter Zalewski	
	Dr Yuliy Chirkov	
	Dr Andrew Holmes	
Surgical Suite	Mr Matthew Smith	
Hanson Institute	A/Prof Peter Coyle	
Postgraduate	Ms Darling Rojas	
Chair	A/Prof Ray Morris	
Facility Manager	Ms Kathryn Hudson	

Executive Support

Ms Gwenda Graves

Facility Manager Reflections



Kathryn Hudson, BHI Facility Manager

"It has been fascinating to witness just how much the change in physical space has impacted positively on researcher relationships, collaborations and built a strong sense of community."

When reflecting on all that has been achieved in the past year, it is easy to become daunted by the sheer volume of work and changes implemented in 2009. It has indeed been a very busy year for researchers at The Queen Elizabeth Hospital, and there have been many exciting developments which all correspond to make the Basil Hetzel Institute(BHI) a stimulating and dynamic place to work and study.

It has been fascinating to witness just how much the change in physical space has impacted positively on researcher relationships, collaborations and built a strong sense of community. Also contributing to this cross disciplinary and collaborative feel is the significant funding provided by the TOEH Research Foundation Program Grants. This major funding has seen the reinforcing of several established collaborations, and the development of new collaborations. Importantly this funding has supported employment of new post doctoral researchers, which has strengthened the early and mid career cohort at the BHI, which in turn will lead to a stronger mentoring and knowledge base for our students. The post doctoral researchers, led by Dr Claire Jessup, have created an "Early Career Researcher group" and have held monthly informative and engaging seminars and discussion panels on topics ranging from career opportunities and advice, grant and fellowship writing tips to journal clubs sessions.

Operationally, the BHI Management Committee has a number of new initiatives which are designed to keep The Institute building flexible and space functionally defined. We are building on a "facility approach" to provision of infrastructure and equipment and continue to build the sense of community between researchers. I have been working towards creating a number of centralised Institute resources, including a centralised cryogenic store and a research purchasing store. The cryogenic store was made possible by a significant donation of the large tank and associated equipment by Professor Basil Hetzel. The creation of the centralised cryogenic store has greatly reduced our personnel hours, reduced our ongoing costs and dramatically increased the stability of our long term samples.

The Institute Management Committee has overseen and provided advice on the donation of over \$730,000 worth of equipment by TQEH Research Foundation since moving into our new building. This equipment has significantly upgraded our basic laboratory infrastructure, but also provided some key pieces which increase our research capabilities, including a laser capture dissection microscope and Bioplex suspension array system. This large donation of equipment is in addition to the student support provided by the Research Foundation, and the significant funding via the Program Grants previously mentioned. The BHI researchers are extremely grateful for the continued support of the TQEH Research Foundation.

2009 has also seen the expansion of the Renal research group to the RAH, which is an exciting opportunity for them. It is perhaps too soon to fully appreciate just how this will affect the Institute and occupants, however, I am confident that the flexibility of space and our personnel will see opportunities for current BHI groups to expand and the attraction of new research groups to The Institute.

Of course a move such as we have just undertaken has provided a number of challenges for staff and students, both adjusting to the new physical space and also building interpersonal and interdepartmental relationships. As expected, change management is always an emotional and testing time for some, with huge leaps forward and some steps backward. The new physical space, focus on collaborative research and community approach to major decisions leaves us on a very solid foundation for research success in 2010. We continue to build upon that which has already been achieved, and I will continue to facilitate on behalf of the Management Committee and researchers to create a productive, efficient and innovative research environment.

> Kathryn Hudson Facility Manager The Institute (BHI)



Awards

Research Day 2009 Award Winners



Research Day Award Winners. (Pictured rear left to right): Dr Andrew Foreman, Mr Raymond Yu, Dr Shaundeep Sen, Dr Michael Collins (Front left to right): Ms Darling Rojas, Ms Nicole Such, Ms Kanchani Rajopadhyaya

Honours Students, Basic Science Raymond Yu, Renal Unit TQEH. Supervisor: A/Prof PTH Coates.	"Calcium Supplementation and its Effects on Bone Loss in Renal Transplant Recipients" (Prize sponsored by TQEH Research Foundation)
Junior Laboratory PhD students Kanchani Rajopadhyaya, Cardiology Unit, TQEH. Supervisors: A/Prof JF Beltrame, Dr DP Wilson.	"Endothelin-1-Mediated Vasoconstriction involves rapid and sustained protein Kinase C and rho Kinase activation" (Prize sponsored by TQEH Research Foundation)
Senior Laboratory PhD students Darling Rojas, Renal Unit, TQEH. Supervisors: A/Prof PTH Coates. Dr R Krishnan,	"Rapid generation of Clinically Applicable Tolerogenic Dendritic Cells: a Potential Cellular Therapy for Transplant Rejection" (Prize sponsored by TQEH Research Foundation)
Higher Degrees Clinical & Registrars Andrew Foreman, Otolaryngology, Head and Neck Surgery, TQEH. Supervisors: Prof PJ Wormald, Dr LW Tan.	"Do S. Aureus Biofilms contribute to CRS Pathogenesis?" (Prize sponsored by TQEH Research Foundation)
Allied Health – Pharmacy Nicole Such, Pharmacy Dept, TQEH. Supervisor: Ms S Goldsworthy.	"Assessment of the Suitability of Surgical Discharge Medications; Are we getting it right?" (Prize sponsored by University of South Australia)
Poster Prize Shaundeep Sen, Renal Unit, TQEH. Supervisors: A/Prof SP McDonald, A/Prof PTH Coates, A/Prof JF Beltrame	"Renal Transplantation Decreases rates of Hospital Separation for Acute Cardiac Events but not Cardiac Failure Compared to Dialysis". (Prize sponsored by TQEH Research Foundation)
Best Lay Description Michael G Collins, Renal Unit, TQEH. Supervisor: A/Prof PTH Coates, Dr S Alexander.	"Screening for Colorectal Cancer in Recipients of Kidney Transplants" (Prize sponsored by TQEH Research Foundation)

Other 2009 Award Winners



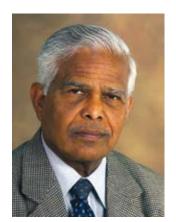




Prof PJ Wormald

A/Prof Renuka Visvanathan Dr Shaundeep Sen

Haematology-Oncology		
Robinson K	SA Health Award 2009: on behalf of the SA BloodSafe Program.	
Medicine		
Visvanathan R	Awarded Lundbeck Fellowship by Australia and New Zealand Society for Geriatric Medicine	
Neurology		
Leong WK	University of Adelaide School of Molecular and Biomedical Science, 1st prize Open Science Category	
Otolaryngology, Head and Neck Surgery		
Foreman A	Australian Society of Otolaryngology Head and Neck Surgery, Ronald Gristwood Medal for Best Registrar Presentation	
Valentine R	American Rhinologic Society Maurice Cottle Award, Best Scientific Presentation	
Wormald PJ	American Rhinologic Society Golden Head Mirror Award for Significant Contribution and Teaching in ENT	
Renal Department		
Carroll R	Mark Cock's Award from the TSANZ and TeamLife Transplant Australia	
Hughes A	TSANZ Young Investigator Award	
Rao MM	Member of the Order of Australia – Queen's Birthday Honour. For service to medicine, particularly renal transplant surgery, as a mentor and educator, and through professional development	
Rao MM	'Lifetime Achievement Award' by the Indian Society of Organ Transplantation in recognition of his role for pioneering transplantation in India	
Rojas D	ANZSN Young Investigator Finalist \$500	
Sen S	Kidney Health Australia Prize for the Best Presentation in the Field of Clinical Research	
Sen S	TSANZ Young Investigator Award	



Associate Professor Mohan Rao

Mohan Rao Receives Order Of Australia Award

Associate Professor Mohan Rao, a renal transplant surgeon at TQEH was appointed as a Member of the Order of Australia (AM) in the 2009 Queen's Birthday Honours list for service to medicine (particularly renal transplant surgery), as a mentor and educator and through professional development.

The award was announced by the Governor-General of Australia with an investiture ceremony held at Government House in September 2009.

Mohan came to TQEH from India in 1968 to train as the first registrar in transplant surgery under the watchful eye of Mr Peter Knight, who performed the first successful kidney transplant in Australia in March 1965.

Apart from a five year hiatus from 1971-1976, when he returned to India and performed the first successful renal transplant in that country and helped to establish transplant units, Mohan's career has spanned over 40 years with the Renal Unit at TQEH.

'My return to Adelaide in 1976 was because I enjoyed and benefited from my first stay in 1968, which was initiated by Professor Basil Hetzel who, at the time, was Professor of Medicine at TQEH. I chose coming to TQEH in preference to accepting a senior commonwealth Fellowship at Oxford in England.'

'Christian Medical College in Vellore, India made me a doctor and a surgeon - TQEH made me a renal transplant surgeon. I have worked all my life in these two institutions and I am satisfied that I have made significant contributions at both places.'

Mohan says one of his most memorable achievements in his career at TQEH was introducing the laparoscopic method of live donor nephrectomy to Australia and popularising this method which has now become the standard in almost all renal units.

'There have also been a lot of rewarding moments at TQEH – all the successful transplants, especially the technically

difficult operations. When my colleagues in transplant surgery, who were sceptical when we introduced laparoscopic donor nephrectomy at TQEH, asked for my help in establishing it in their units and when I was named an Angel by Kidney Health Australia in 2006.'

In 2009, Mohan was also awarded a 'Lifetime Achievement Award' by the Indian Society of Organ Transplantation in recognition of his role for pioneering transplantation in India.

Mohan has taken long service leave prior to his retirement and will not be moving with TQEH Renal Unit to the Royal Adelaide Hospital in January 2010. He wanted to finish his career as a transplant surgeon at TQEH, where it all started.

Mohan has been appointed as a visiting Professor to a Malaysian University in Kuala Lumpur, where he is establishing a kidney transplant program and training surgeons in this field.



(Pictured left to right): Dr Alex Disney, Prof Mohan Rao, Prof Graeme Russ

Acknowledgements

The Queen Elizabeth Hospital gratefully acknowledges and thanks the following organisations for their support to medical, scientific, nursing and allied health research:

Adelaide Integrated Biosciences(AIB) Laboratories	Kidney Health Australia	
Adelaide Microscopy	Leukaemia and Lymphoma Society of USA	
Alzheimer's Australia	Merck Sorono Pharma	
Anne Marie Trimboli Trust	Monash University	
Arthritis Australia	Muriel T Gunn Foundation	
ASERNIPS	National Breast Cancer Centre	
Australia & New Zealand Intensive Care Research Centre	National Health & Medical Research Council (NHMRC)	
Australian National University	National Heart Foundation of Australia	
Australian Neurology	National Stroke Foundation	
Australian Red Cross Blood Service (ARCBS)	Nepean Hospital	
Australian Research Council (ARC)	Osteoporosis Australia	
Baker Heart Research Institute	Pfizer Australia (CVL)	
BioInnovation SA	Peter MacCallum Institute	
Boehringer Ingelheim	Rebecca L Cooper Foundation	
Biomet	Royal Adelaide Hospital	
Cancer Australia	Royal Australian College of General Practitioners	
Cancer Council of South Australia	Royal Australasian College of Surgeons	
Catholic Archdiocese of Sydney	Sanofi	
CellCept Australia	South Australian Department of Health	
Centre for Genomic Sciences	Stroke SA	
Channel 7 Children's Medical Research Foundation of SA	Stryker	
Child Health Research Institute	St Jude's Research Institute, Memphis USA	
Child, Youth & Women's Health Service – Familial Cancer Unit	St Vincent's Institute Melbourne	
Clive and Vera Ramaciotti Foundation	Surgical Synergies	
Commonwealth Dept of Health & Aged Care	The Mason Foundation	
Divisions of General Practice	The Northern Communities Health Foundation Inc	
Flinders University	The Queen Elizabeth Hospital Research Foundation	
Garnett Passe and Rodney Williams Memorial Foundation	Trevor Prescott/Freemasons Society	
Haemophilia Foundation	Women's and Children's Hospital	
Hanson Institute	University of Adelaide	
Inner Wheel Australia	University of Columbia	
Institute of Medical & Veterinary Science (IMVS)	University of Queensland – Diamantina Institute	
Intensive Care Foundation	University of South Australia	
John T Reid Charitable Trusts	Walter & Eliza Hall Institute	
Juvenile Diabetes Research Foundation	Women's and Children's Hospital Adelaide	



The Queen Elizabeth Hospital Research Foundation

The Queen Elizabeth Hospital Research Foundation (TQEHRF) has been benefiting the South Australian community for 44 years through dedicated support of world-class medical and health research at The Queen Elizabeth Hospital (TQEH).

Over the past 16 years, TQEHRF has provided more than \$15 million to research at TQEH. Your support of TQEHRF has been vital to the ongoing work at The Queen Elizabeth Hospital's research facility, The Institute, including the Basil Hetzel Institute, enabling the researchers to conduct valuable work in the fields of cancer research, heart and kidney disease, diabetes, asthma and other serious conditions.

The research staff and students at The Queen Elizabeth Hospital and The Institute rely heavily on TQEHRF to ensure they can maintain a reputation for quality 'bench to beside' research, where laboratory findings are quickly translated into numerous patient care and treatment options.

BOARD DETAILS

Chair

Ms Lee Jameson – Managing Director, Gray Management Group

Deputy Chair

Mr John MacPhail – Partner, Finlaysons

Board members

Associate Professor John Beltrame

– Cardiologist, The Queen Elizabeth
Hospital / Associate Professor of
Medicine

Mr John Hender – State Manager – SA, Private Wealth – Private Clients, Perpetual Pty Ltd. Mr Ken Milne – Architect, Milne Architects Pty Ltd.

Professor Richard Ruffin – Director, Division of Medicine, The Queen Elizabeth Hospital.

Mrs Melinda OLeary – Nova Aerospace Australia

Ms Luciana Larkin – Partner, Tregloans Chartered Accountants

Mr Paul Flynn – CEO, The Queen Elizabeth Hospital Research Foundation



Ms Lee Jameson



Mr John MacPhail



A/Prof John Beltrame Mr John Hender



Mr Ken Milne



Prof Richard Ruffin



Mrs Melinda O'Leary



Mr Paul Flynn





Ms Lee Jameson, Chair

"The Institute is a physical reminder of why TQEHRF exists — providing funds to assist medical research. The Institute provides state-of-the-art facilities to do such research and we are very proud of our involvement."

Chair's Report

I am honoured to be presenting my first Chair report for The Queen Elizabeth Hospital Research Foundation, and it is with a great deal of pride that I am able to report a record year for the Foundation, delivering just under \$2 million in funds towards medical research, an increase of twenty five percent on last year's results.

These fabulous results come from much hard work, dedication and great passion undertaken by the staff, volunteers and supporters of The Queen Elizabeth Hospital Research Foundation. The Foundation would not be in the position it is today without the leadership and dedication shown by our outgoing Chairman and Deputy Chairman, Mr John Michell and Mr Ray McGrath.

To honour the unwavering commitment and support shown, the board are pleased to announce a "John Michell Early Career Fellowship" and an annual "Ray McGrath Medical Research Program Grant" in acknowledgement of the many years of support, immense generosity and passion for the Foundation over many years by both John and Ray; they will be sadly missed.

The board and I also pass on our sincere appreciation to Maurice Henderson, our exiting Executive Director, for his time at the Foundation and we wish Maurice all the very best for the future.

2009 has brought about many other changes for The Queen Elizabeth Hospital Research Foundation. In March 2009 we saw the opening of The Queen Elizabeth Hospital's \$19 million research building, The Institute, including the Basil Hetzel Institute for Medical Research. Housing over 120 researchers and students, The Institute is a physical reminder of why TQEHRF exists – providing funds to assist medical research. The Institute provides state-of-the-art facilities to do such research and we are very proud of our involvement. Our "Research Committee" continues to provide the board with a view as to the best allocation of funds.

After the incredible success of our 2009 Home Lottery, which saw all 56,000 tickets selling out before the early bird deadline, we launched the inaugural Lifestyles Lottery. Launching in August, the Lifestyles Lottery resulted in an overwhelming success, also selling out all

tickets prior to the early bird deadline. It is without question the calibre of prizes on offer and the exposure the lottery achieves state-wide that increases the awareness of The Queen Elizabeth Hospital Research Foundation as a whole, and it is this exposure that assists the Foundation's other initiatives.

Our Planned Giving is growing a very strong base, as is the Basil Hetzel Society with over 250 donors making a commitment to support world-class medical research.

The Research Foundation Tribute Funds are continuing to grow as does our In Memoriam Gifts, all of which would not be possible without the support of our staff and volunteers.

The Research Foundation is known for being entrepreneurial in its manner of fundraising. Our Black Tie Event, this year titled "An Enchanting Dream under the Southern Stars", is a showcase event and highly attended; our Direct Marketing program continues to grow and is currently undertaking improvements to provide even more support to research.

The next year will continue to be a time of change for the Foundation. We are entering a new era, an era of challenges, of positive change and of new directions. We will be seeking to continue on the growth path the Foundation has taken over the last five years and to diversify in our income development initiatives.

To lead The Queen Elizabeth Hospital Research Foundation through this period is our newly appointed CEO, Mr Paul Flynn. Paul comes to the Foundation with a wealth of experience in both the not-for-profit sector and the commercial world, and he has the passion and enthusiasm to match. The board are looking forward to working with Paul and his team as we look to grow our recent success and continue to achieve what the Foundation exists for – providing vital funds to assist medical research.

May I take this opportunity to thank you for your support over the past year, no matter how large or how small, all support is greatly appreciated in whatever manner that may be.

Lee Jameson, Chair

The Queen Elizabeth Hospital Research Foundation Board



"The tremendous success of the Home Lottery led to the launch of the first Lifestyles Lottery later in the year, allowing TQEHRF to make an additional significant contribution to medical research this year."

TQEHRF seeks to maintain that its contribution to world-class medical research is supported by ethical, innovative and well executed income development activities. We are ever conscious that the brilliant and hard-working scientists and research staff rely heavily on the productivity of our work and the generosity of our community.

Life Guardian - Planned Giving

Our planned giving program, Life Guardians, offers individuals the opportunity to leave a lasting legacy to research by making a gift in their will. Over 750 supporters have made this generous commitment, signifying a strong base for future support of vital medical research at TOEH.

Basil Hetzel Society

We have a number of generous donors who have left gifts of \$10,000 or more to support world-class medical research in their wills, and The Basil Hetzel Society was developed to acknowledge these special and very generous contributors. Over 250 donors have already kindly made this commitment and have been acknowledged as members of this special group for their generosity and commitment to future generations of Australians.

Tribute Funds

TQEHRF's Tribute Funds are a positive and simple way for family and friends to leave a lasting legacy to a loved one. A Tribute Fund carries the name of a loved one and in their name; TQEHRF continues to ensure that medical research takes place to improve the health and well being of our community.

Family and friends are able to support the lasting legacy of their loved one in a number of ways, such as making contributions on significant dates such as anniversaries and birthdays, by making monthly gifts or by choosing to host dinners, auctions or quiz nights.

In every activity undertaken, the lasting legacy of the family member or friend is forever linked to the constant search for better health outcomes for all future generations.

In Memoriam Gifts

TQEH Research Foundation's In Memoriam Gifts program provides a special way for friends and family members to remember and honour a loved one whilst making a life changing contribution to medical research that will benefit all Australians. Making a gift in memory of a loved one is a thoughtful and generous gesture which represents an everlasting personal memorial that contributes to healthier solutions for our community.

Lotteries

The Dream Big...Win Big... theme for 2009 Home Lottery was a huge success, effectively supporting much needed medical research at TQEH. The Home Lottery produced a record sell-out with all 56,000 tickets being sold 30 days before the Early Bird deadline. There were more than 3800 prizes this year, ranging from a spectacular Scott Salisbury Home, luxury vehicles, worldwide holidays and entertainment prizes. The lucky winners of the \$1.2 million home were Ray and Maria Brandt of Flagstaff Hill. The tremendous success of the Home Lottery led to the launch of the first Lifestyles Lottery later in the year, allowing TQEHRF to make an additional significant contribution to medical research this year.

The inaugural Lifestyles Lottery was launched to the public on August 13th and again all tickets were sold before the Early Bird deadline. The prize package was fantastic with the winner able to choose either the Scott Salisbury Wentworth Show home for its undeniable opulence...or take the \$1.1 million dollars in cash. Other amazing prizes included the Family Fun Prize package, a line-up of vehicles that gave you your 'keys to freedom', 'extraordinary escapes', and 'extravagant extras'. TQEHRF has had much success since 2004 with our lotteries and gives credit to the valuable partnerships we have in this community with our terrific supporters, prize suppliers, media partners and all service providers.







(Pictured left to right): Eddie Liew, Jing Lee, Martin Hamilton-Smith, Stavroula Raptis, Silvia Toop.

Events

The Queen Elizabeth Hospital Research Foundation holds many wonderful events throughout the year to support medical research into illness and disease that impact the lives of numerous Australians.

One of the major income development activities is the Annual Black Tie Dinner. Through the generous support of corporate businesses and the wider South Australian community, this event provides a significant amount of support for medical research each year. It has made a name for itself throughout Adelaide and has become one of the anticipated dinners of the year.

The 2009 'An Enchanting Dream Under the Southern Stars' Dinner was no different and was about celebrating the wonders of Australia with fine food, wine and fantastic entertainment while raising funds for vital funds to support medical research at The Queen Elizabeth Hospital. The dinner was a success, raising more than \$70,000 toward research into cancer at TQEH.

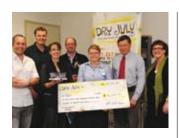
One of the highlights of the night was the \$100 a ticket raffle, which gave the opportunity for one lucky person to win a 1 carat round brilliant cut diamond valued at \$8,500. This was kindly donated by Maria Kenda of KendaCraft Jewellery. The lucky winner was Janice Schutze and was drawn by Wayne Phillips, our MC for the evening.

Special thanks must go to our Platinum Sponsor, Nova Defence, Gold Sponsors, S.O Asher Consultants, Panurgem, Australian Construction Surveys, Scott Salisbury Homes, Channel 9 and SGIC. Thank you also to our Silver Sponsors, Charterhouse, Bank SA, SeaRay Sales, Australian Post and McGrath Real Estate. Raffle Game Sponsor, KendaCraft Jewellery, General Sponsors, Peter Lehmann, Wirra Wirra, Coopers, Terry Howe Printing and Traffic Creative. We also thank our generous auction item donors, in-kind supporters and guests.

The Queen Elizabeth Hospital Research Foundation was the beneficiary of several other major events throughout 2009 including The Advertiser/Sunday Mail Foundation Male Famous Faces Luncheon and the American Chamber of Commerce (AMCHAM) Internode Lunches held throughout the year.

We have also been a beneficiary for many community based fundraisers including the Women's Group of the Pierkos Society, Port Wakefield Golf Day and Italian Fundraiser Dinner Dance. We thank our community groups for their ongoing support, passion and devotion to TQEHRF.

TQEHresearch Research Report 2009







Top: (Pictured left to right): Mr Phil Grove, Mr Brett MacDonald, Dr Petra Neufing, A/Prof Richard D'Andrea, Kristin Linke, Dr John Norman, Maureen Tremaine

Bottom: (Pictured left to right): Dr Ken Pittman, patient Brian Page and Dry July Ambassador Shaun Burgoyne

Development

Direct Mail

Direct mail is one of the many ways that we keep in contact with members of our community that regularly support the world-class medical research at The Institute.

We also use Direct mail to contact those members of our community who may wish to support medical research in a meaningful way. Our regular communication informs supporters about specific research projects undertaken at The Institute and detail news items about individuals who have benefited directly from "bench to bedside" translational research at The Institute.

We also regularly keep in touch with supporters and potential donors by phone. We see this as an easy and effective way to spread the word about the important research being conducted at The Institute. Many people in the community have been inspired in this way to support the endeavours of the researchers and scientists at The Institute in their effort to deliver life-changing clinical outcomes to all Australians. A highly effective part of this process is via the Key Medallion Program which not only supports our research endeavours but also provides a valuable key safety service to members of the club.

There are a large group of long-time supporters of medical and health research who have chosen to establish a program of regular giving. This provides a high level of surety to the researchers in their ongoing search for world-class medical and health improvements.

Dry July

In 2009 The Queen Elizabeth Hospital Research Foundation won the fantastic opportunity to be the beneficiary for the innovative fundraising initiative, Dry July.

Dry July was founded in 2008 when three heavy drinking guys from Sydney decided to embrace sobriety for a month, get healthy and raise some money for charity. The program was a huge success and significant funds were raised for the Prince of Wales Hospital Foundation in Sydney. Due to the success of Dry July in its first year, the program was extended nationally in 2009 with beneficiaries in each state.

In 2009, over \$1.26 million was raised nationwide for hospitals in each state. In South Australia, over \$54,000 was raised and will go towards improving the lives of adults living with cancer at The Queen Elizabeth Hospital.

South Australian celebrity ambassadors who participated in and supported Dry July include Shaun Burgoyne, Matthew Abraham from 891 ABC Adelaide, Keith Conlon and Tony Pilkington from Five AA and Ryan 'Fitzy' Fitzgerald from Nova 91.9 and TQEHRF thanks them all for their valuable support.

The use of the funds raised through Dry July was to be focussed largely on patient benefits. At the time that this report went to print the Oncology Department at TQEH were still in the process of finalising how exactly the funds raised would be used to improve the lives of patients living with cancer in the hospital. A number of options being considered include laptops with internet access for patients to keep in contact with friends and family, a flat screen plasma TV for the waiting rooms and a number of comfortable treatment chairs for patients.

The Institute Opening

In March 2009, The Queen Elizabeth Hospital's \$19 million state-of-the-art research building, The Institute, opened for business, heralding an exciting new era in medical research and patient benefits in South Australia.

More than 120 researchers and students moved from the former nursing accommodation building at the hospital into the striking purpose-built three-level building.

The building was officially opened and dedicated by the Health Minister The Hon John Hill MP on March 2nd which coincided with the 50th anniversary of the opening of the main hospital building at TQEH.

The new building represents the largest amount of money ever spent by the State Government on a specialist medical research centre. TQEHRF immediately committed \$500,000 for new research equipment to be housed in the new building for its commencement of operations.

TQEHRF hosted a cocktail party to showcase the new building and celebrate its opening. About 100 people, representing generous supporters of medical research in Australia, the scientific community and the representatives of the Department of Health in South Australia attended the function held in the atrium of the building.

Special guests included the Minister for Health, The Hon John Hill MP, the Minister for Science, The Hon Paul Caica MP, the Mayor of Charles Sturt, Harold Anderson, the Mayor of Port Adelaide-Enfield, Gary Johanson and Dr Basil Hetzel AC.

A generous cheque from one of TQEHRF's largest donors Gordon Pickard was presented by his representative Ron Wall and will go towards the ongoing research at The Institute.

Supporting Students at TQEH

Nurturing and supporting talented students is a high priority for The Queen Elizabeth Hospital Research Foundation. Each year, TQEHRF supports students by granting scholarships.

In 2009, the Research Foundation supported 12 Postgraduate students, 9 Honours students and four vacation scholarships.

Research Day

The Research Foundation was again the major supporter of The Queen Elizabeth Hospital Research Day, the most significant annual event in the research calendar at TQEH. This event is aimed at providing an opportunity for young student researchers to present their data before an audience under conditions which are typical of most national and international scientific conferences. Students receive awards in various categories, with most of the awards being sponsored by The Queen Elizabeth Hospital Research Foundation.

Research Day in 2009 was held for the first time in the new research facility, The Institute (BHI), and the organising committee was delighted to receive a record 42 Abstracts, a reflection of the great research ethos of the new building.





Top: (Pictured left to right): Gordon & Joyce Watson, Jerry Witkowski, John & Maree Mufford.

Bottom: (Pictured left to right): Joanna Jensen, Prof Basil Hetzel & Mary Jepson



(Pictured rear left to right): Prof Basil Hetzel, Dr Andrew Foreman, Dr Michael Collins, Mr Raymond Yu, Dr Shaundeep Sen, Prof Guy Maddern (Front left to right): Ms Darling Rojas, Ms Nicole Such, Ms Kanchani Rajopadhyaya

"This RAC system is vital as it allows money to be allocated on strong academic basis and scientific capability, and is an important step towards creating an impartial system that demonstrates consistency across all funding by TQEHRF."

Allocation Of Funding

Research Advisory Committee

To ensure accountability of money spent and to ensure a transparent transfer of funds from The Queen Elizabeth Hospital Research Foundation to researchers at The Queen Elizabeth Hospital, TQEHRF funding is gifted on a competitive application basis. To ensure this application and review process is fair and equitable, TQEHRF established a Research Advisory Committee (RAC) in 2007. This committee is comprised of esteemed South Australian researchers and has representation from The Queen Elizabeth Hospital, Children's Health Research Institute, Women's and Children's Hospital and the three South Australian Universities.

The Committee determines the best way to allocate the money donated by TQEHRF to

the researchers. The chair of this committee is required to be a member of The Queen Elizabeth Hospital Research Foundation board and is currently Professor Richard Ruffin.

In 2008 the RAC (constituted without conflict of interest) chaired by Prof Rob Norman and assisted by Prof Heddy Zola, made recommendations to fund five program grants within The Institute/TQEH for 3-5 years. The RAC recommendations were accepted by the board of directors, and grant funding commenced in early 2009. An annual review of the progress will monitor each program grant.

This RAC system is vital as it allows money to be allocated on strong academic basis and scientific capability, and is an important step towards creating an impartial system that demonstrates consistency across all funding by TQEHRF.

Funding Research Projects

The following table outlines the allocation of support TQEHRF has provided to research at The Queen Elizabeth Hospital.

The Queen Elizabeth Hospital Research Foundation Inc. Distribution of Funds to Research in 2008-09

Detail of Funds	\$
The Institute	\$220,000
New research equipment	\$554,829
Program Grants	\$607,500
Commercialisation	\$274,678
Other Research Distribution	\$40,939
Targeted funds:	
- Breast cancer	\$23,641
- Cancer research	\$25,423
- Cardiology	\$26,081
- Department of Medicine	\$10,550
- Endocrine & Diabetes	\$2,756
- Intensive care	\$17,500
- Neurology	\$4,875
- ANR neurology	\$1,356
- Oncology / Hematology	\$22,779
- Renal research	\$7,419
- Respiratory	\$2,304
- Rheumatology	\$501
- Renal ward	\$9,290
- Pharmacokinetic drug study	\$250
- Western Palliative care	\$17,909
- Gastroenterology	\$1,860
- Clinical Pharmacology - R. Morris	\$5,000
- Dr. LW Tan (BioInnovation SA Commercial Development Grant)	\$62,420
- Research Day 2009; Posters	\$8,704
TOTAL funds provided towards research	\$1,948,564

CREDITS

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